UNC-CH HEALTH SCIENCES LIBRARY
H00380412I

The Library
of the
University of North Carolina

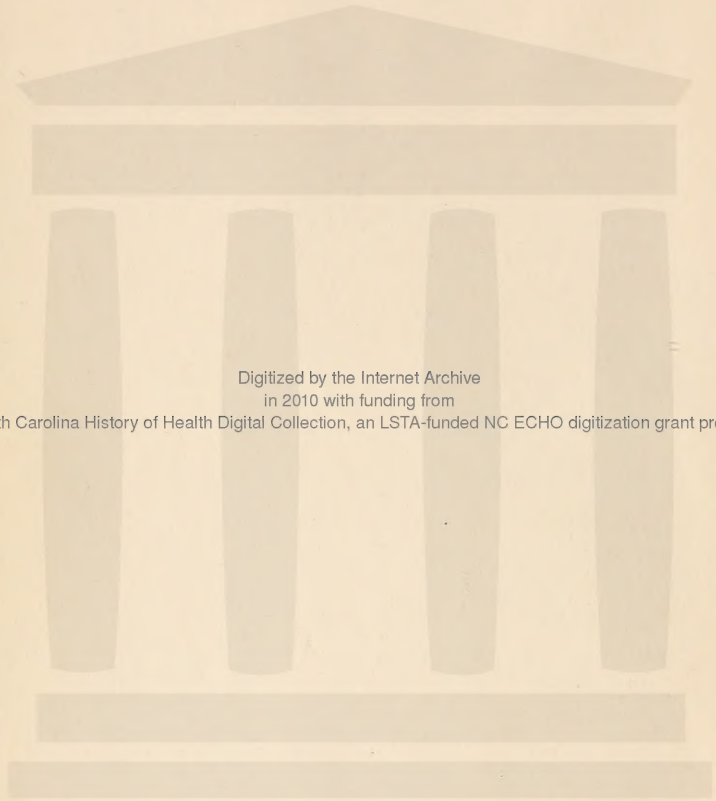
Endowed by The Dialectic
and
Philanthropic Societies

610.5
S727s
v.101
1939

Med. lib.

This book must not be taken from the Library building.

LUNC-15M JL 38



Digitized by the Internet Archive
in 2010 with funding from
North Carolina History of Health Digital Collection, an LSTA-funded NC ECHO digitization grant project

http://www.archive.org/details/southernmed1011939char

SOUTHERN MEDICINE & SURGERY

Official Organ
of the
Tri-State Medical Association
of the
Carolinas and Virginia
and the
Medical Society of the
State of North Carolina

Volume CI

Edited and Published by
James M. Northington, M.D.

Library, Univ. of
North Carolina

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., JANUARY, 1939 No. 1

The North Carolina Compensation Law

James W. Davis, M.D., Statesville, North Carolina
Surgeon-in-Chief Davis Hospital

WITH the progress that has been made in in every line of human endeavor, it is natural that with so many millions employed in what is, for want of a better term, called industry, a system of care for those injured in the pursuit of their occupation for a livelihood would be evolved. This is a great progressive movement which may be compared to the coincident progress in general medicine and surgery and their various specialties.

That such a system could not be perfect from its inception and that changes and revisions would be necessary was realized in advance by all who devoted any thought to the problem. Unfortunately not all of us doctors are as patient and understanding about these matters herein involved as we expect others to be about matters mainly medical—even as to the changes in methods of treating disease that come about with so-called progress.

The first compensation law of this State was enacted by the 1929 General Assembly. A commission composed of three members was appointed to administer the law. It was arranged that hearings be held in the various counties, which provision was a great convenience, since patients, witnesses and others would not have to go very far to testify when hearings were held. Usually a single commissioner hears the evidence and makes the award. However, if either of the parties at interest appeal within seven days from the award of a single commissioner, a hearing before the entire Commission will be arranged. Further, one not satisfied with the findings of the Full Commission may appeal to the Superior Court for the county in which the accident occurred, and from this court either side may appeal to the Supreme Court of the State. Certainly those involved in any compensation case have ample opportunity to be heard in court.

332724

In the administration of the compensation law, it must be realized that a compensation law must, of necessity, be a compromise by the employers and employees in which each group has waived certain common law rights, and that the prime purpose of the law is to provide a degree of certainty and security; likewise, the doctors and hospitals have been afforded some degree of certainty and security as to obtaining compensation for services rendered patients who come under the compensation law. Allowances for hospital and doctors' fees are paid promptly, greatly to the relief of the harassed secretary who looks after the collections, or to the doctor who has to look after his own collections.

To get some idea of the scope of the work done by the Industrial Commission during the year ending July 1st, 1938, consider the fact that in that period 42,849 accident reports were handled by the Commission. Nearly 50,000 cases in one year! 160 cases each working day! Of these cases, only 952 went to a hearing before one of the commissioners. From this, it will be seen that a vast majority of these cases were settled by agreements between the parties without the necessity of any hearing, although the agreements were approved by the Commission, which is required to examine each claim and see that the requirements of the compensation law were fully met. The total cost in these cases of medical and hospital expenses, compensation, fees, etc., was $1,654,134.00—an average cost of $40.96 per case. Out of this sum, the doctors and hospitals received $565,382.00—an average of $14 per case. During this same period of time, 80 cases were appealed to the Superior Court and 25 to the Supreme Court. Evidently litigation here has been reduced to the minimum.

It is interesting to note from the Biennial Report of the Industrial Commission for 1936-1938 that the Superior Court reversed the Commission in only four cases, and the Supreme Court reversed the

Superior Court in six. As 42,849 people were involved in these accidents, this is a remarkable record, which, to my mind, is evidence beyond any question that the compensation law in North Carolina is administered with promptness and justice. Our own experience in many thousands of cases corroborates this fully.

Another thing, it is evident from the figures given that the Industrial Commission has administered the compensation law at a minimum cost.

In addition to the usual accidents, an amendment was added by the 1935 Legislature regarding occupational diseases. A Division of Industrial Hygiene was established and this will be the means of saving many patients from asbestosis and silicosis.

A State-wide Industrial Safety Conference was organized and this has done and will do a great deal more toward improving the working conditions, eliminating hazards and reducing accidents.

The workman's compensation laws are social legislation: they impose a tax upon employers and employees subjecting both to more or less control with regard to the operation of the law. Naturally it would be only right that there should be some supervision of the benefits derived by doctors and hospitals by reason of this legislation.

In conversation with doctors, I have learned that many do not know that compensation is purchased at a price which represents a certain percentage of the employer's payroll and not so much per year per man. To illustrate, if in the same industrial classification there are two men working in the same establishment, one making $15 a week and the other making $30 a week, the insurance company will collect a premium on the $15 man in an amount just half the premium collected on the $30-a-week man. Obviously Section 26 of the Workman's Compensation Act requiring that the injured person's station in life be taken into account in passing upon charges for treatment was intended to meet this situation, so that the ratio of the cost of treatment of low-wage claimants would not be so much out of proportion as to require such an increase in the insurance premium as to compel employers to reject the compensation law.

In many of the states the compensation laws limit the liability for treatment, the limitation being either as to total amount, length of time the patient is to be treated, or as to both. In such states there is not much need for supervision of the cost of treatment. The North Carolina Workman's Compensation Act places no limitation upon the length of treatment or the cost of treatment, but permits the Industrial Commission to authorize such treatment and for such time as may reasonably be expected to rehabilitate the patient. This provision for unlimited medical attention certainly is advantageous to patients, to doctors and to hospitals. Under our Act, a doctor is not required, either after a certain date or after his bill amounts to a certain sum, to decide whether he will cease to treat the patient, or to continue to treat him without remuneration.

At times there have been complaints about the reduction of bills for care of compensation cases. This has often been due to the fact that the fee schedule was not consulted before making out the statement, or to some other lack of familiarity with the intent and provisions of the Act.

Several years ago, as another evidence of its desire to coöperate with the medical profession, the Commission agreed to the appointment of a committee of three doctors by the President of the State Medical Society, that committee to meet with the Commission from time to time for the sole purpose of advising respecting contested medical bills. It is true that the committee meets only in an advisory capacity, it being the Commission's duty under the law to pass upon the bills. Nevertheless, it should be interesting and a great satisfaction for every doctor to know that the Commission has accepted and acted upon every recommendation of the committee wherein the committee has advised increasing the fee originally approved for the doctor.

A committee representing the State Medical Society has met with the Industrial Commission and a revised fee schedule has been prepared, one which in many hundreds of cases has been found very satisfactory.

It is true that the fees are not as great as those that would ordinarily be paid by the average well-to-do patient, yet for industrial patients the collection of doctors fees and hospital accounts, in full, is far more than sufficient to offset the difference.

Another factor that we must remember is that if the medical fees were raised to a point greatly in excess of what they are now, the cost of carrying workman's compensation insurance would be so great a burden upon the employers as to kill the goose that lays the golden eggs.

Sometimes doctors consider it a personal affront to have a bill for treatment reduced. Ordinarily it should be considered as but a desire to keep the cost and care of the injured employee in agreement with the fee schedule. Most doctors would prefer to have this done rather than take a chance in collecting accounts in the ways that were available before the compensation law was enacted.

The compensation law is one of the greatest contributions to his welfare that the injured employee has ever had. Both the insurance carrier and the employer are anxious for the employees to be under the care of competent doctors and in good hospitals. No expense is spared to give the patient the best of treatment and to get the best possible results in the shortest possible time. In the case of all patients, the best care and treatment are available to the injured employee. Special nurses are provided when needed. In fact, everything is done that can possibly be done to restore the patient to full duty at the earliest possible time.

During the period of disability, the patient receives a certain weekly or monthly check which enables him to care for his family. When the disability is ended and he is ready to return to work, the patient does not have to worry about the medical expenses, as this is taken care of by the insurance company. The employer also, through the policy he carries is fully covered and the compensation expense and all other expense are taken care of promptly.

The fact that the employer looks after these patients closely is another great help. They see that the patient gets the *proper* attention. If the patient happen to fall into incompetent hands, the insurance company will endeavor to have him referred, in his own interest, and that of the company.

A thorough understanding of these facts should make every doctor disposed to coöperate fully in keeping the insurance companies posted about each accident case from the time the patient comes under care until he is discharged and returns to work.

Under the old system, before we had a compensation law, there was no standard method for paying the medical, surgical and hospitalization costs. The bills were sometimes paid, often not paid. More often than not, the doctor received his pay a long time afterwards when the court procedures were over, if at all. Many bills had to be reduced in order that the amount allowed by the court could get around to all the claimants.

Under the North Carolina Compensation Law the patient is promptly cared for, his hospital and medical bills are paid promptly and he receives a weekly income while he is sick, enabling him to take care of his family while he is unable to work.

It is true that no compensation law can cover everything or be entirely satisfactory in every little detail, but our compensation law is, in my opinion, exceptionally satisfactory and becoming more so each year. The administration of this law is the very best. The fairness and justice of the decisions of the commissioners are unquestioned. Every doctor who does much compensation work will agree that the compensation law is administered remarkably well and with remarkable satisfaction to patients, to doctors, to hospitals—even to employers.

KNOWN AND UNKNOWN FACTORS IN TUBERCULOSIS (A. S. ANDERSON, St. Petersburg, in *Jl. Fla. Med. Asso.*, Dec.)

If a guinea pig is inoculated with a given dose of tubercle bacillus of the *human* type it soon dies from a generalized tuberculosis. The rabbit shows more resistance, the dog still more, the cat again more, and the chicken is practically immune. But given the *bovine* type of tubercle bacillus, the reverse order of resistance takes place; the chicken being most susceptible and the guinea pig most resistant. We are struck by the similarity of a related phenomenon, anaphylaxis. If a sensitized guinea pig, rabbit and dog each is given foreign protein in a vein we find the cause of death different in each animal. The guinea pig dies of asphyxia, brought about by a tetanic contraction of the smooth muscle of the bronchi which blocks the intake and output of air. The rabbit dies a cardiac death of a mechanical blocking of the circulation in the arterioles in the lungs. The dog dies of a sudden accumulation of blood in the liver and the abdominal veins. Thus, in the three different animals with an identical stimulus we have three different responses and three different modes of death.

We used to think that a child receiving an initial infection of tubercle bacilli sufficient to produce a large pneumonic involvement was doomed to die. We have learned that the result is practically always recovery.

Once a hypersensitivity to the tubercle bacillus has occurred we know not how to remove it. There are many who still hope that desensitization through tuberculin will in time be practicable; so far it has failed of realization.

Why the great variation in mortality rate for different age groups in male and female? Up to 5 years, the rate is about even—84 for the male and 78 for the female, per 100,000. From 5 to 10 years, a drop of 10 for the male and 10 for the female. When we come to the 'teen age the death rate for the female about doubles that of the male, 94 to 49 per 100,000. This ratio persists for a few years and then in the thirties we have the ratios about even. Then deaths among the males increase so that in the age group of 45 to 60 years the rate for males is almost twice as high as for females.

Now why does this change in ratio occur? We do not know.

It has long been accepted that hyperthyroid patients handle tuberculosis infections well. The myxedema patient, on the other hand, is a fertile field for the tubercle bacillus and handles the disease poorly. Proof as to the efficacy of calcium in the treatment of tuberculosis is lacking. From out of the unknown has come the fact that calcium deposition is an end result of healing and not an active agent in the healing process. In hyperthyroidism which resists active tuberculosis we have a negative blood calcium balance!

Codliver oil with tomatoes has become almost a routine treatment for tuberculosis enteritis. It is believed by some that its rich vitamin A and D content and the vitamin C of tomato juice is the responsible factor in its value in this treatment.

It is still too early to state the place that the vitamins hold in the treatment of tuberculosis.

Inguinal Hernia in Women

Report of Two Cases

WILLIAM FRANCIS MARTIN, M.D., F.A.C.S., Charlotte, North Carolina

INGUINAL HERNIA probably depends for its occurrence upon the upright position and congenital weakness. As it is five times more common in men than in women, the following two cases in women seen within a half-year may be of interest. Medical literature records only a few thousand in women since the birth of Christ.

For a hernia to develop, a weak spot in the abdominal wall is presupposed, with repeated intra-abdominal pressure causing the weak spot to yield further. The inguinal canal is by nature a weak part, though not so weak that hernia would develop without the addition of other causative factors. In man the canal carries the spermatic cord with its arteries and veins, while in woman it carries only the round ligament of the uterus.

A patulous canal and weak ligamentary supports may contribute beyond the muscle weakness[8], and some unusual strain (naturally more likely to occur in masculine occupations) may complete the causative conditions.

An inguinal hernia often occurs as the result of doing unduly heavy work, but congenital local weakness is essential; or, as Woolsey has suggested, strong men at the circus and wrestlers would be particularly liable to this form of hernia, while such is not the case. Women who acquire an inguinal hernia are usually found to have been lifting heavy weights, or to have been doing heavy washing in a stooping position. Childbearing is not an etiological factor as Kelly[9] has pointed out.

One school of thought holds that inguinal hernia develops in a congenital peritoneal sac only, but in those cases the hernias usually develop in infancy. It is possible, however, that a congenital or even hereditary tendency may be aggravated in later years by undue strain so that a hernia develops.

The hernia may be indirect, sliding down the inguinal canal, as in the following cases (see *Figs. 1* and *2*), or it may push through the abdominal wall as a direct hernia.

In the two cases here reported intestine and omentum, respectively, were found in the sac, but excepting the liver and pancreas, any abdominal organ may be found within the sac. Women may have inguinal hernias for a number of years without appreciable discomfort. When the contents of the sac becomes gangrenous through constriction, or an inflammatory process is brought about by an infected tube, or other abdominal viscus (with the previously named exceptions), slipping into the sac, then the ensuing pain suggests to a patient the seeking of medical aid. It is an interesting suggestion that probably one of the main purposes served by the omentum is the plugging of the neck of a hernial sac to prevent the entry of other organs, such as the uterus and adnexa[8]. Pregnancy may occur with an ovary or the uterus within the hernial sac.

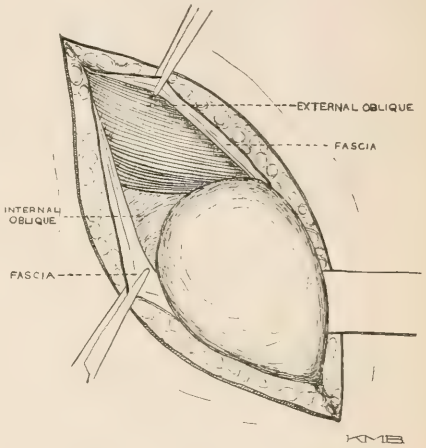


FIG. 1. HERNIAL SAC EXPOSED

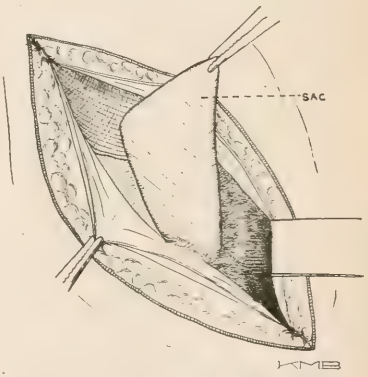


FIG. 2. SAC PULLED OUT OF INGUINAL CANAL

Inguinal hernia in woman is not so easily palpable as in man, due to the small opening in the external abdominal ring and the smallness of the canal of Nuck (which corresponds to the inguinal canal in man). In woman, the hernial protrusion usually extends into the upper portion of the corresponding labium majus when the erect posture is maintained, and there is usually a definite impulse transmitted on coughing. The location of the impulse in the inguinal instead of the femoral region is the means of diagnosing the kind of hernia. Often the contents of the sac will recede into the abdominal cavity when the patient lies down (see *Fig. 3*).

Championiere, who reported 19 cases of inguinal hernia in woman in 1892, was the first to urge operation. The round ligament is frequently found adhering to the sac (*Fig. 3*). He excised both the sac and the ligament; others contend that the ligament should not be excised.

In both the following cases the ligament was excised and sutured (as shown in *Fig. 4*) to the anterior abdominal wall, with sutures taken through all layers with the exception of the superficial fascia and skin, and the sac was then closed.

Figs. 5 and 6 illustrate the completion of the operation (in Case 1) with the suturing of the oblique muscle to Poupart's ligament, and a final overlapping and suturing of facia to muscle and facia, prior to closing of the skin.

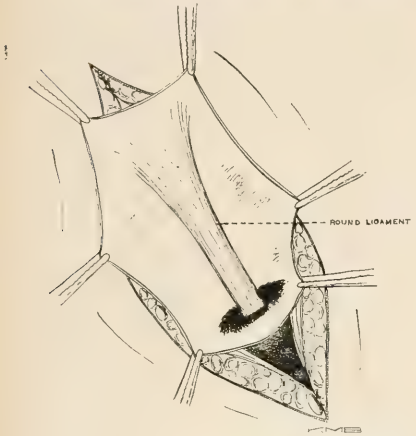


FIG 3 SAC OPENED SHOWING ROUND LIGAMENT

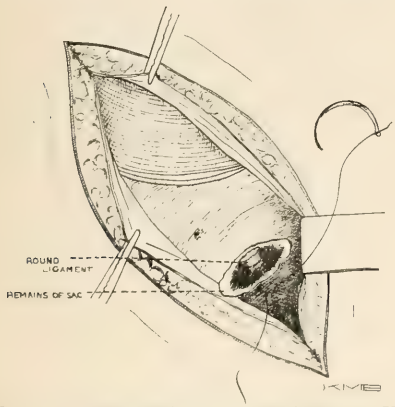


FIG 4 SAC REMOVED & ROUND LIGAMENT SEVERED
ROUND LIGAMENT TRANSPLANTED TO PARIETAL PERITONEUM AND MUSCLE

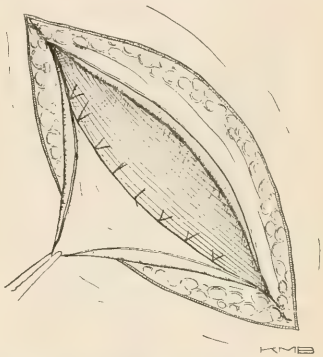


FIG 5 MUSCLE SUTURED TO POUPART'S LIGAMENT

Case 1.—A colored woman, aged 40, married, three children, no miscarriages. History of lump in lower right side of abdomen for the past 15 years. Family history and past history not contributory.

On October 7th, 1938, while doing a very heavy washing, the patient noticed an enlargement on the right side in the inguinal region, with pain which became progressively worse. Seven days later she consulted me. Physical examination was essentially negative, other than an easily palpable mass in the right inguinal region, painful on palpation and giving an impulse on coughing. No mass or impulse was felt in the femoral region, nor any enlarged glands. T. was 99.4, p. 88, r. 18, r.b.c. 4,500,000, hgbn. 85%, w.b.c. 18,000, Wassermann reaction and urinalysis negative. Diagnosis of a right indirect inguinal hernia was made and operation advised.

On October 18th, at the Good Samaritan Hospital, under general anesthesia, through an inguinal incision strangulation of the ometum was found in the sac of an indirect inguinal hernia. The diagrams illustrate the operative procedure.

The patient made an uneventful recovery and was dismissed as cured on November 7th.

Case 2.—White woman, aged 33, married, four children all living, ages 7 to 13, health good. On April 20th, 1938, this patient gave a history of a "rupture" of the left side for the past three years. It had become painful with slight enlargement in the past week. There was no history of undue strain. Her family and menstrual history was negative. Physical examination was essentially negative, other

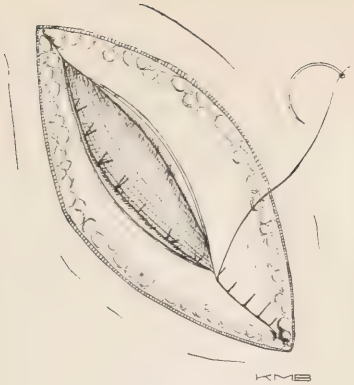


FIG.6 OVERLAPPING & SUTURING FASCIA TO MUSCLE & FASCIA

than a very definite left, and a beginning right, inguinal hernia. Pain was complained of on palpation over the left side. An impulse was felt in the inguinal regions on coughing, no impulse, masses or glandular enlargements in the femoral regions. R.b.c. were 4,600,000, hgbn. 80%, w.b.c. 8,000, urinalysis and Wassermann reaction negative.

A diagnosis of a bilateral inguinal hernia was made and on April 22nd, at St. Peter's Hospital, a bilateral herniotomy was done. Omentum was found in the sac on each side. The same fundamental operative procedure as that illustrated for Case 1 was followed. An uneventful recovery was made and the patient dismissed on May 16th as cured.

References

1. Cohn Isadore. Hernia of ovary and fallopian tube. A record of 25 cases. *Surg. Gynec. & Obst.* 51: 256, 1930.

2. Coley, W. B. and Coley, B. L. *Cyclop. Med.* Vol. VI. 795.

3. Fallis, L. S. Recurrent inguinal hernia. Analysis of 200 operations. *Ann. Surg.* 106: 363, 1937.

4. Fite, W. B. An analysis of 1514 inguinal herniotomies. *Jour. Oklah. State Med. Assn.* 31: 333, 1938.

5. Hewett, H. W. Hernia of the female internal genitalia through the inguinal canal. *Am. J. Obst. & Gynec.* 5: 530, 1923.

6. Kelly, H. A. Operative Gynecology Vol. II.

7. Moore, W. J. Hernia of the ovary. *Surg. Gynec. & Obst.* 43: 483, 1906.

8. Moyat, T. B. Inguinal hernia containing a rudimentary horn of a bicornute uterus. *Brit. Med. Jour.* 1: 237, 1926.

9. Wakeley, C. P. G. Hernia of ovary and fallopian tube. *New Orleans Med. & Surg. Jour.* 80: 723, 1928.

Emergency Treatment of Injuries
(H. M. Lee. Minneapolis, in *Minn. Med.*, Dec.)

For controlling hemorrhage, intravenous injections of calcium chloride or repeated small transfusions of whole blood may be required. In bleeding from arteries which do not permit clamping or transfixing, a piece of fresh muscle rubbed on a piece of gauze and quickly applied will often promote clotting. An increasing pulse rate should lead one to suspect bleeding. Pallor, anxiety, restlessness and thirst are signs of continuing hemorrhage. Obviously, its control is urgent.

In shock, however, the onset is usually abrupt; the patient is apathetic, but not unconscious; there is no restlessness or anxiety, but, rather, indifference; the t. is subnormal, and there, too, the b. p. is low. The treatment is external heat, judicious use of morphine (except in head injuries), elevation of the foot of bed and blood transfusions.

Planned treatment must consist of careful examination of the injury by inspection, frequently palpation, demonstration of function or loss thereof and x-ray. Strict attention to asepsis, such as the proper preparation of the surgeon's hands, the wearing of a mask covering nose and mouth, a surgeon's cap, and careful cleansing of the skin with soap and water, great care being taken not to wash dirt into the open wound. The clean wound is then swabbed with one of the newer mercurial germicides. The wound is then closed not too tightly, loose dressings applied, unless temporary pressure is required to control bleeding.

The contaminated or potentially infected wound after adequate examination and preparation of the surgeon as for a major operation is cleansed with neutral white soap and water or normal salt solution, devitalized skin and muscle is cut away, and Carrel-Dakin tubes inserted, leaving the wound open or only partially closed, with loose dressing, immobilization, elevation and irrigation every 2 hrs. with Dakin's solution.

Severed tendons and nerves should be sutured as early as possible, using fine silk where there is a likelihood of healing without severe infection. In contaminated wounds a secondary suture is advisable at least 3 weeks after the original wound is completely clean and healed. The part should be immobilized for 10 to 12 days in position to relieve tension, and splintered for 3 weeks.

In general, a spreading infection should be allowed to localize before any incision is made. Infections about the face, mouth, and neck *should not be pinched, punctured or incised, or otherwise traumatized.* The treatment is heat, ultraviolet rays, rest and fluids. Sulfanilamide may be indicated. Infected wounds and spreading infections in other locations are also best treated by light moist dressings kept warm with a heat cradle or lamp, and elevation.

Ochsner's solution, properly applied, is of value in spreading infections with lymphangitis and induration.

X-ray treatment of infections is apparently of real benefit.

Burns are best treated by tannic acid, followed by silver nitrate. For small burns nupercainal ointment relieves pain promptly, dressings do not stick to the wound, no heavy crusts form, and the wound is easily kept clean.

In wounds of the abdomen, hemorrhage and shock must be treated first unless there is rapid internal hemorrhage which only immediate operation can control. Small to moderate-sized wounds of the liver are best sutured with catgut through pieces of muscle excised from the abdominal wall. Muscle may also be inserted into the wound cleft.

Wounds of the spleen of any degree are best treated by splenectomy. Wounds of the pancreas are sutured or tamponed and drained. In suspected rupture of the urinary bladder, if the urine contains blood or if no urine is obtained by catheter inject 500 c.c. of 5% sodium iodide solution and examine by x-rays to make a diagnosis.

Head injuries must be treated by bed rest, external heat, intravenous administration of 50 to 150 c.c. of dextrose solution, probably lumbar puncture and drainage reducing the pressure 50%, and limitation of fluids.

Advises against the use of morphine in severe head injuries. Sodium amytal by vein for quieting.

Review of Recent Literature on Sulfanilamide*

With Reports on Its Use in Peritonitis

E. J. Cathell, M.D., Lexington, North Carolina

NO DRUG in recent years has been so widely accepted and distributed by the drug manufacturers and doctors, and unless one keeps posted he is almost led to believe that sulfanilamide is a cure-all.

It is said that at least 150 compounds closely related chemically to sulfanilamide have been studied with respect to their protective action against bacterial infections, particularly of the beta-hemolytic type. Of this large number it appears that sulfanilamide has the most desirable properties. It may be given by mouth or by injection.

Sulfanilamide is a white, crystalline, bitter powder, melting between 165 and 166.5°C., with no perceptible odor. The theoretic sulphur content is 18.6%. It is only slightly soluble in cold water, but is soluble in hot water.

The present conception of the mode of action of sulfanilamide is: first, it does not possess bactericidal powder upon any organisms present; second, it does not stimulate phagocytosis; third, it does not affect the capsule of encapusulated organisms; fourth, it does not affect the virulence of any organisms; fifth, its action is to inhibit the multiplication of susceptible organisms, which action is termed bacteriostasis. Thus .... the action of the drug is primarily one of slowing down the rate of multiplication of the streptococci, thus permitting the phagocytes to dispose of them before they exert a lethal effect upon the body or tissues.

The drug may be administered orally, intramuscularly or subcutaneously. With this method it is usually easiest to maintain the blood concentration at from 7 to 10 mg. %.

The dose is the same for all diseases, except when life is threatened; then, as in septicemia or meningitis, the usual dose is doubled. Oral administration is most efficacious, because it allows doses to be given at 4-hour intervals, a requirement to maintain a constant blood and tissue concentration. It is recommended that the total 24-hour dose be given as the first dose, to be followed at 4-hour intervals, with the fractional 24-hour dose. To prevent the acidosis which this drug tends to produce, it is recommended to administer one grain of sodium bicarbonate for each grain of sulfanilamide. However, the dose of sodium bicarbonate should not exceed 10 grains at any one administration.

The following table represents the accepted standard dosage, which is approximately 15 grains per 20 pounds of body weight each 24 hours:

ORAL DOSE PER 24 HOURS

	Mild Infections	*Severe Infections*
Infants up to 40 lbs.	15 to 20 grs.	30 to 50 grs.
Children 40 to 80	35 to 45	70 to 90
Older children 80 to 120	50 to 60	100 to 120
Adults	60 to 80	120 to 160

The dosage of neoprontosil subcutaneously or intramuscularly is 1.5 c.c. per pound of body weight per 24 hours, administered hypodermically at 6- to 4-hour intervals.

As a rule the proper time to stop the administration of sulfanilamide is when the patient has been symptomless for two or three days. A period of about three days is required to free the body completely of the drug.

At present the clinical use of sulfanilamide is almost wholly empirical, because the exact mode of action is not known. By any route of administration the drug is readily absorbed and quickly diffused through the tissues.

The following organisms are considered to be inhibited by this drug:

1. It is specific only for beta-hemolytic streptococcus.

2. Streptococcus viridans possibly may be inhibited to a limited degree.

3. Pneumoccus types I, II and III are likewise affected to some extent.

4. In meningococcic meningitis, it is more effective than meningococcus antiserum. In 52 cases of meningococcus meningitis treated with neoprontylin the mortality rate was 15%, while in those cases treated with the antiserum the mortality rate was 30%.

5. Its effectiveness in urethritis, vaginitis, prostatitis, arthritis and ophthalmia is about 50% in the reported cases.

6. It is worth a trial in *Bacillus Welchii* gas gangrene.

7. Occasionally it does not benefit in a hemolytic streptococcic infection and the reason is not known.

8. Several observers have reported benefits in pyelitis caused by the colon bacillus and staphylococci.

*Presented to the Ninth District N. C. Medical Meeting September 29th, 1938.

The clinical uses of sulfanilamide have been listed as follows:

1. Puerperal fever.
2. Postabortion septicemia.
3. Complications of scarlet fever.
4. Erysipelas.
5. Nasal, postnasal and throat involvements of hemolytic streptococcal origin, including septic sore throat.
6. Otitis media and mastoiditis.
7. Cellulitis.
8. Pneumonia.
9. Cerebrospinal meningitis.
10. Gonorrhea and other genitourinary infections.
11. Acute cholecystitis.
12. Appendix abscess.
13. Subphrenic abscess.
14. Septic compound fractures.
15. Gas-bacillus infections.

Toxic Manifestations and Complications

Although sulfanilamide is considered relatively safe, there are definite contraindications. First, it should not be administered with coal tar derivatives or saline laxatives, because there is a likelihood of producing a sulfhemoglobinemia or methemoglobinemia; second, to a patient with impaired renal function it must be administered with caution and the dose determined by the blood concentration, not permitting it to exceed 15 to 20 milligrams per cent; third, if an anemia exists, great care should be exercised because the benzene radical of the drug may damage the hematopoietic system.

Untoward reactions, even death, may result from the administration of sulfanilamide. The toxic effects are more commonly the result of its indiscriminate use, but may occur from idiosyncrasy. Reactions may be classed as: mild, moderate and severe. The mild symptoms consist of headache, anorexia, vertigo and general malaise, with possible slight cyanosis and dyspnea.

A progression of any of the foregoing symptoms, with special reference to cyanosis and dyspnea, constitutes the moderate reactions. The severe reactions may result in persistent sulfhemoglobinemia, skin manifestations, hyperpyrexia or hypopyrexia, abdominal and chest pains, tachycardia, persistent dyspnea, diarrhea, and numbness and tingling of the hands and feet. Marked disturbances of the blood, such as anemia, jaundice, leukopenia and a granulocytosis may occur. The severe manifestations may result in collapse and death.

Buchtel and Cook have found that 15% of patients cannot take large doses of sulfanilamide, and 10% are unable to tolerate it at all. Patients in bed tolerate larger doses than do those who are ambulatory. Several investigators have pointed out that ambulatory patients exposed to sunlight are more apt than are others to develop a skin rash after sulfanilamide. In general, children tolerate the drug better than do adults. Elderly patients with cardiac, renal ar hepatic involvement cannot stand the larger doses as can others.

Sulfanilamide in Peritonitis With Some Case Reports

Perrin H. Long and Eleanor A. Bliss[1] studied the effects of sulfanilamide and neoprontosil solution upon the exudate obtained from the peritoneums of mice suffering from experimental hemolytic streptococcal peritonitis.

"We observed from hourly studies made of peritoneal exudates, that even when sulphanilamide was injected directly into the peritoneal cavity, no evidence of either bacteriostatic or bactericidal effect *in vivo* could be obtained. For several hours after therapy, the organisms multiplied as though unhampered by the sulphanilamide. This multiplication continued until suddenly a wave of phagocytosis in which the polymorphnuclear leukocytes played a leading role, occured. The time of this phenomenon .... was from 6 to 15 hours after treatment had been started. When once established, the phagocytosis of the organisms proceeded at a rapid rate, provided the therapy was continued until the peritoneal cavity was cleared of streptococci. In the control mice, multiplication continued and the animal was soon overwhelmed by the infection."

These authors believe that sulfanilamide exerts its action upon the streptococci, rather than upon the leukocytes, because it has long been established by Bordet that the leukocytes from the exudate in experimental streptococcic peritonitis due to highly virulent organisms are capable of phagocytosis of other organisms, but not the streptococci.

Seven cases of primary peritonitis in children, due to streptococcus hemolyticus are reported[2], in which sulphanilamide was used in various amount and all cases were fatal.

Colebrook and Kinney of London report[3] four cases of general peritonitis given neoprontosil with striking results.

Harold D. Spickerman says[4]: "On the septic surgical ward of Veterans' Administration Facility, Los Angeles, sulfanilamide has been used since January, 1937, in the following types of cases: Peritonitis, mostly that following ruptured appendices and ruptured peptic ulcers; carbuncles and furunculosis; cellulitis, acute and suppurative; and various acute and chronic inflammatory conditions, including abscesses of the abdominal wall, synergistic gangrene of the chest wall, chronic granu-

1. *Southern Medical Journal*, May, 1937.
2. *The Journal of Pediatrics*, August, 1937.
3. *The Lancet*, June 6th, 1936.
4. *Medical Bulletin, Veterans' Administration*, July, 1938.

lomatous ileitis and various types of infected wounds.

In peritonitis it has been used in both bacillary and cocal infections; most of these cases, however, showed a mixed infection with *B. coli* predominating. Neoprontosil was given in large doses subcutaneously and by mouth as soon as possible. Under heavy doses there was an apparent drop in the mortality in this type of case with a much more rapid disappearances of symptoms of generalized peritonitis and purulent drainage, and shortening of the post-operative ones, with drainage. No attempt was made to treat acute infectious conditions before operation."

For the past year we have been using sulfanilamide in our cases of peritonitis at the Davidson Hospital. We realize from our small number of cases and limited experience that little could be learned, but we would like to report our experience for addition to that of others.

In all of the cases drainage was used before sulfanilamide was given. The dosage was 15 grains per 20 pounds body weight, reducing as symptoms subsided.

Of ruptured appendix with general peritonitis we had 3 cases—2 complete recovers, 1 death 27 hours after being admitted.

Ruptured appendix with abscess, 1 case—complete recovery.

Ruptured appendix with localized peritonitis, 2 cases—2 complete recoveries.

Ruptured gastric ulcer with generalized peritonitis, 1 case—1 death 72 hours after operation.

Specific pelvic infection, 1 case—1 rapid convalescence.

Multiple gun-shot wounds of intestines, 1 case—1 complete recovery (details to follow)

We do not consider that there have been any striking results in these cases, but that the time of sickness was lessened and in to some extent the mortality lowered. One case we give more in detail:

A man, 30, was brought into the hospital complaining of pain in abdomen, semi-conscious and in moderate shock, with a bullet hole one-third way from symphysis to umbilicus, abdominal muscles rigid. On opening the abdomen a great amount of free blood was found. Five perforations of the ileum 12 inches from cecum were found and closed. The abdomen drained and treatment given for shock. As soon as he reacted he was started on neoprontosil, and as soon as possible on sulfanilamide by mouth. He received 140 c.c. neoprontosil and 220 grains of sulfanilamide in 6 days. There was a gradual decline of temperature of 101-3.5 and pulse of 14.. on the second day, to a normal temperature and pulse on the fifth day. There was a slight elevation thereafter, of both in the afternoon, but of no significance. There was very little purulent drainage at anytime. The patient left the hospital on the 13th postoperative day.

In this case, we are inclined to feel that intensive sulfanilamide therapy played some part as an abortive factor and inhibiting a general peritonitis.

Drugs For the Treatment of Malaria

(D. G. Gill, Director, Bureau of Preventable Diseases, in *Jl. Med. Asso.* Ala., Dec.)

On the symptoms of primary infection, quinine, in the indicated doses has a definite action from the third day onwards (second paroxysms of fever) in benign tertian; its action is less reliable or less rapid, according to the strain of P. falciparum concerned, on attack of malignant tertian, which often continue until the fifth dose (third or fourth paroxysm).

The treatment of primary P. vivax or P. malariae infections with quinine in the usual doses (1 grm. daily) is followed by relapses in as high as 50%.

Atebrin in daily doses of 0.30 grm. (for adults) is slightly more active than quinine in the usual dose of 1 grm.

Some in tropical countries prefer quinine during the first days of the acute attack and atebrin thereafter. In benign tertian the fever nearly always falls after the first 3 therapeutic doses of atebrin—i.e., by the second attack. In malignant tertian the fever falls almost invariably by the third attack.

The action of atebrin on relapses is slightly more effective than that of quinine, especially in the case of benign tertian and of certain strains of malignant tertian.

Quinine with plasmoquine represents one of the most efficacious methods of treating benign tertian and quartan malaria, 1 grm. to 1.30 grm. of quinine-plus plasmoquine (even only 0.03 grm. twice a week) reduces perhaps more than any other method the number of relapses in benign tertain except in the cases of certain strains, and in some cases also in malignant tertian.

The simultaneous administration of atebrin and plasmoquine appears to aggravate the toxicity of each. It is not to be advised. Consecutive treatment with atebrin first and then with plasmoquine in suitable doses (0.30 grm. atebrin daily or five to seven days, followed by 0.02 grm. plasmoquine daily for five days) diminishes substantially the number of malignant tertian, more so in benign tertian and quartan.

Mistakes in the Diagnosis of Cancer

(From *Jl. Med. Asso.*, Ga., Dec.)

Mistakes observed most frequently

1) Treating malignant skin lesions, incorrectly diagnosed, with ointments, silver nitrate, mercurochrome, or even inadequate excisions.

2) Ointments and silver nitrate on early cancers of the lip.

3) Giving mouth washes and local applications to patients with ulcers or growths of considerable duration in the mouth without making any real attempt toward accurate diagnosis.

4) Allowing hoarseness, occurring without obvious causes, to be treated with sprays and medicine when laryngoscopic examination would have discovered cancer.

5) Continuing medical treatment for unrelieved digestive disturbances when an early gastrointestinal x-ray examination would have disclosed the presence of a growth.

6) Failure to make a digital examination and, if necessary, an examination with a proto scope, of *every* patient with rectal bleeding.

7) Allowing women who have spotted or bleeding between periods, and excessive flow at menstruation, to go along without a vaginal examination. Women who have spotting or flowing after menopause to continue without an examination.

To prevent the continuance of such neglect is a direct responsibility of the medical profession.

One Hundred Hysterectomies With Indications and Results*

ROBERT THRIFT FERGUSON, M.D., F.A.C.S., Charlotte, North Carolina

IN reporting this series of operations I have two things definitely in mind: first to point out the indications for hysterectomy, secondly to give the results.

I have always been very conservative in regard to advising hysterectomies and have never had occasion to regret it. A good many years ago when it was fashionable to remove the uterus in every case of pus tubes I struck to my former rule and was much gratified when the profession turned away from so mutilating an operation. While in many cases it appeared to be wiser from an operative standpoint to remove the uterus, where the tubes were bound to it and everything else in the pelvis so that detaching adhesions from the uterus would certainly mean the formation of many scars; yet I have found by long experience that the patients who had the uterus left *in situ* were much better off afterwards than were the ones who had hysterectomy done. For only two of the patients in this series was a hysterectomy done in connection with pus tubes, and that was because the adhesions were so dense and firmly attached to a soft friable uterus that wherever the adhesions were pulled away portions of the wall of the uterus came away with them. The uterus probably has some internal secretion that has not been discovered; anyhow a woman is much more comfortable with than without her uterus, except when that organ is, itself, the seat of grave disease.

In the early period covered by this series hysterectomies were being done for advanced carcimona of the cervix and three of this series were of this type, after explaining to the patient that the only hope for a cure was in a complete hysterectomy, and even this did not offer much in the existing stage. This was before Curie's wonderful discovery had been found to be the best agent for dealing with cervical cancer. One of these patients succumbed 48 hours following operation. This case was complicated by gallbladder infection with two stones the size of guinea eggs. When I asked this patient why she had delayed so long in coming for an examination her reply was that her family physician had been treating her for cancer for a year and had just informed her that it was no longer a medical case and advised her to consult a surgeon. That was a number of years ago and I think since that time all of us have learned a lesson. The seriousness of the operation was fully explained to her and she said since, without operation, she was going to die, if there was any chance at all she wanted to be operated upon.

Two other patients of this type were operated on for advanced carcinoma of the cervix and they lived six months before it returned in the scar and proved fatal. I have not operated on any advanced carcinomas of the cervix since, but immediately refer this type of patient for radium or x-rays. One other patient with a pelvic infection died of septicemia four days following operation, therefore the operative mortality in this series was 2%.

Ninety-three of this group had supravaginal hysterectomy, seven the complete operation. So far as I am aware only one of the 93 has developed carcinoma of the cervix. This patient had a supravaginal hysterectomy for fibroid tumors in 1929 and died from carcinoma of the cervix in 1934, five years later. Pathological examination at the time of operation showed fibromyoma.

Henriksen at the Hopkins Clinic found in 940 cases of carcinoma of the cervix that carcinoma developed in the stump in 2.3%. At the Mayo Clinic, of 1181 cases 3.97% were carcinoma of the cervical stump.

Another patient with large multiple fibroids was given a supravaginal hysterectomy. On completing the operation I examined the liver and found it filled with cancerous nodules for which nothing could be done. This patient died six months later from cancer of the liver.

One patient in this series had a hysterectomy done for a very large round tumor of the uterus which had the appearance of a fibroid; but when the pathological examination was made it proved to be a papillary adenocarcinoma of the fundus. This patient was referred for x-ray therapy and has remained well to date, now about five years.

Two patients in this series had hysterectomy for bicornate uterus with prolonged hemorrhage.

One patient had a hysterectomy following extrauterine pregnancy after abdominal delivery of an 8-pound baby at full term. The reason for this was that the placenta was attached on top of the fundus of the uterus and the only hope of saving

*Presented to the Mecklenburg County (N. C.) Medical Society Meeting at Charlotte, January 3rd.

the patient's life from hemorrhage was to do a hysterectomy. The patient had an uncomplicated recovery. This case, one of many interesting features, was reported in the *Journal of the S. C. Medical Association* at that time.

Another patient had a large, round, smooth tumor of the uterus which had the feel and appearance of a fibroid but proved on pathological examination to be a myosarcoma. She has remained well over a period of five years.

Two patients in this series had complete hysterectomy done for adenocarcinoma of the fundus, previously diagnosed from uterine scraping, both removals following with x-ray therapy. Both are living and well, one eight, and the other nine, years following operation.

One patient had a hysterectomy for a cystic ovary with a twisted pedicle a week after the torsion took place. The ovary was as large as my head and was perfectly black, the color extended throughout one-half of the body of the uterus on the same side. Anything short of a hysterectomy would have been a calamity.

One hysterectomy was done on a patient who had multiple lacerations of cervix and perineum, with cystocele and rectocele, and continuous hemorrhage from the uterus at 46 years of age.

One of the early patients in this series, who weighed 212 pounds, had a supravaginal hysterectomy removing a 12-pound fibroid tumor leaving her an even 200 pounds. She had an uneventful recovery and on the 16th day following operation, while lying on the bed resting, she raised upon her elbow to speak with a friend and fell over dead from an embolus. The veins leading from this tumor were the size of my thumb and the embolus was evidently dislodged from a thrombus in one of these large veins.

Three of the cancers of this series were of the squamous-cell type and originated in the cervix; two from the body of the uterus were adenocarcinoma; one was myosarcoma; another was papillary adenocarcinoma.

To recapitulate: seven patients in this series had complete hysterectomies, 93 supravaginal; both ovaries were left in situ in 14, one was left in 10; both ovaries were removed in 76; 85 hysterectomies done were for fibroids, seven for carcinoma; two had hysterectomies in connection with large pus tubes and severe adhesions, one for myosarcoma, two for enlarged uterus with hemorrhage at the menopause, two for bicornate uterus with hemorrhage, one for ovarian cyst with twisted pedicle, one for extrauterine pregnancy at full term.

In a report from the Mayo Clinic covering a period Jan. 1st, 1934, to Dec. 31st, 1936, showing the results in 1725 hysterectomies the mortality for total abdominal hysterectomy was 1.4%, subtotal 1.3%. Siddall and Mack in 1141 supravaginal hysterectomies showed a mortality of 2.6%; Bartlett and Simmons in 2733 cases, 1.7%; Mayo and Mayo in 3085 cases, 1.2%; Greenhill in 1857 cases, 4.5%; Burch and Burch in 166 cases, 4.2%; Samuels and Edlovitch in 276 cases, 2.5%; Fullerton and Faulkner in 335 cases, 4.4%; Read and Bill 1739 cases, 2.1%; Nelson in 122 cases, 3.2%; Pearse in 1900 cases, 1.8%; Masson in 217 cases, 1.8%; Treston in 100 cases, 2%. Newell and Scrivner showed 13 deaths from peritonitis and 12 from embolus in 1312 supravaginal hysterectomies at Barnes Hospital, St. Louis.

Circulation Time As a Diagnostic Aid in Hyperthyroidism

(S. J. Goldberg, Philadelphia, in *Ann. Int. Med.*, April 1938)

Instances of hyperthyroidism have been reported in which the b.m.r. has been normal throughout. There is slowing of the pulmonary blood flow in myxedema and increased rapidity of flow in thyrotoxicosis.

A simple clinical method for learning the circulation time: The patient reclines, with the arm at the level of the right auricle; 2.5 c.c. of 20% calcium gluconogalactogluconate solution,* or 5 c.c. of 10% solution, are injected into a vein at the elbow as rapidly as possible through an 18-gauge needle. The end points in that moment at which the patient first feels intense sensation of heat in the mouth and tongue, measured accurately with a stop watch. In more than 500 patients observed during the past two years, we have found this method accurate, practical and safe. There have been no accidents, no important subjective discomfort, no venous thrombosis, and no sloughs.

The normal arm-to-tongue circulation time in 60 patients was from 10 to 16 seconds—ave. 12.5. These tests were not performed under basal conditions, but after a short period of rest lying down. The p. rate did not influence the circulation time but it was occasionally affected by emotional states. Normal circulation speed was found in hypertension, bronchial asthma, nephritis with edema, and in well compensated vulvular heart lesions. The circulation time was shorter in hyperthyroidism, fever and anemia and was prolonged in heart failure and in myxedema.

In 72 cases of hyperthyhroidism, most of which were being prepared for operation, the diagnosis was proved histologically. The average circulation time for the 72 was 8.8. seconds—6.3 to 12.0. It would appear that a shortening of the circulation time is characteristic of hyperthyroidism, and that there is a definite relation between the rapidity of the blood flow and the height of the metabolism in this disease.

In two cases mild myxedema developed some months after operation, and the blood flow became correspondingly slowed.

---

*Neocalglucon (brand of calcium gluconogalactogluconate), 20% solution, supplied through the courtesy of the Sandoz Chemical Works Inc.)

Tuberculosis Clinic*

Staff North Carolina Tuberculosis Sanatorium, Black Mountain

Dr. A. L. Ormond: Through the kindness of Dr. Bittinger I present five cases of bilateral pneumothorax we have at Western North Carolina Sanatorium. All of these patients were at the Eastern Division before they were transferred to this division.

The first case is one of a man aged 39. He came to the Sanatorium giving a history of cough, mucopurulent sputum, and loss of weight for two years before admission. He was not acutely ill and apparently has never been very ill. He lost a little weight and had a dry, hacking cough. The diagnosis was made by his local doctor in July, 1934, and he was admitted to the Eastern Division of Sanatorium on the 24th of November, 1935. His sputum was Gaffky 0.

The first picture shows extensive bilateral tuberculosis, a large cavity on the left side and numerous cavities on the right in the upper two-thirds of the lung. He had no tuberculous complications. Artificial pneumothorax was induced on the right side the 9th of December, 1935. He had very little reaction from this procedure and pneumothorax was induced on the left January 3rd, 1936. The subsequent course was uneventful. He had no fluid formation, as the picture shows, and he has an excellent collapse of both lungs. The cavities disappeared, and the presence of a few adhesions on the left are no indication for pneumolysis. This patient came to the Western Division of Sanatorium with full time up (7:30 to 10:30 and 3:30 to 9:00) and all meals in the dining room . . . He was started on graduated exercise and now has 20 minutes walking exercise twice daily, and is doing well. He is able to do a little light work if such can be found. He is well, so far as we are able to determine, though not completely cured. His sputum is negative. His blood sedimentation reaction is 9 mm. of Hg.

The next case, of a woman aged 21, is an excellent example as to what can be done for an acutely ill patient. She came in with a history of overwhelming contact at home from several members of her family. She had cough for two years and a progressing symptom syndrome of tuberculosis. She had lost a lot of weight and was acutely ill at the time she came to Sanatorium clinic because of the contact at home and because of the fact she had a sister who was a patient there at the time. At the time she came she had extensive tuberculosis with cavitations on her left side and upon our advice she had a phrenic evulsion on the left at the Shelby Hospital before her admission. When she came she was so prostrated we decided pneumothorax should be tried before admitting to the hospital. It is the policy of the institution that when patients are hopelessly ill, we necessarily have to return them home because there are so many waiting whom we can help. Dr. Bittinger was able to get a collapse of the left lung, as the next picture shows, and the patient was admitted. She was acutely ill and continued so for a long time. Of course, she was very emaciated. She had a tuberculous enteritis that was vigorously treated and eventually responded. After she reacted favorably from the induction of air on the left, artificial pneumothorax was induced on the right in March of 1936, and here we have the last picture made since she came to the Western Division of Sanatorium. It shows an excellent collapse bilaterally and all that can be seen in this picture on the right is a little scarring. On the left the collapsed lung is still very dense. At the present time, she is fairly well nourished, and feels well all the time Her sputum was negative for eight months, Gaffky No. 1 on the last examination. In all probability she will leave the hospital with positive sputum, considering the left side of the chest. This shows two interesting points: the combination of pneumothorax and phrenic evulsion and the rise of the diaphragm to the 2nd I.S. Ventrally. She has little cough at present. Her blood sedimentation reaction is 19 mm. of Hg. I hope she will continue to do well, and we will soon have her on walking exercise.

Third case: Woman aged 22, another that came with a history of overwhelming contact at home and with a definite bilateral infiltration. The diagnosis was made in February, 1935, by her home doctor as bi-lateral far advanced tuberculosis. She was admitted to the Sanatorium in June, 1935, with sputum Gaffky 5 and Wassermann plus four. Our policy is to treat the lues along with the tuberculosis. She has had repeated alternate courses of neo-arsphenamine and bismuth sodium tartrate. She has a negative Wassermann now, and the Laughlin test that was run yesterday was also negative. She has received no treatment for her lues in the last three months. She had bed rest for a year after being admitted to the Sanatorium and it was throught this lesion would clear up without

any further procedure.... Artificial pneumothorax was started on the right side in September, 1936, on the left a month later. This patient had no reaction or any consequence, her temperature remained within normal limits. There were no tuberculous complications, and in October of 1937 we started this patient out to the dining room again with collapse as you see here. She now has full time up, takes her meals in the dining room and feels fine. Her sputum is free of bacilli.

The next patient is a woman aged 18. She had a respiratory infection in January, 1931, that was thought to be a cold. She continued to go a great deal, and in June of the same year became quite ill and consulted her local doctor who diagnosed pulmonary tuberculosis. Pneumothorax was induced by her doctor soon after the diagnosis and, beginning to feel well again within a few weeks, she ignored advice and got up and started having a good time again. When she came to Sanatorium her other side was very little worse than when the diagnosis was made. Pneumothorax was induced because her sputum was positive. She was admitted in January of 1937 as a strict bed patient. Artificial pneumothorax was induced on the right and we have the collapse that you see here. She is now going to the bathroom only, because she has been with us only since January, 1937.

The last case is that of a woman aged 22. She had general malaise and cough and sputum two years before admission. Her mother was a patient at Sanatorium. She was slow to give up, as a lot of young girls are. She lost 45 pounds of weight before January, 1933. She was sent to Asheville under the care of Dr. Stevens. He gave her bed rest for a while and later induced artificial pneumothorax on the left side, and when she came to us the collapse was like this. We continued collapse of the left side, and as you can see there was a great deal of tuberculosis all throughout the right lung. This patient was also very acutely ill when she came to us in February, 1934. Ten days after admission artificial pneumothorax was induced on the right side. She had fluid subsequently on the left and had rather a stormy course at times, and seemed to improve very rapidly at times. You can see the form of this fluid on the left side. The last picture will show that the fluid is almost entirely gone. Now, we have continued this pneumothorax since 1934. This patient has improved and shows a great deal of calcification of the lungs. This cavity persists, her sputum is still positive. We are beginning to get this patient up. She is very energetic and it is hard to hold her down.

To summarize: Average time in the hospital for all these patients, two years and four months. All of them are getting up. One has walking exercise. Two are arrested, and four out to meals and all time up, and one has bathroom privileges. It shows conclusively that bilateral pneumothorax is worth using in selected cases.

Present Day Concepts in the Diagnosis, Treatment and Prevention of Tuberculosis

(J. A. Myers, Minneapolis, in *Wisc. Med. Jl.* Oct.)

Within an hour after tubercle bacilli have been introduced into the blood stream the neutrophils have focalized them at certain points. The most common site is the lung; common sites are the brain, liver and spleen. All of these cells which have ingested and focalized t. bacilli are doomed.

The second line of defense consists of monocytes, which engulf the dead and disintegrating neutrophils with their t. bacilli. The monocytes are not capable of destroying all the bacilli. Soon the monocytes are converted into epithelioid cells. Proliferation of all connective tissue cells in the immediate vicinity is stimulated.

After tubercle formation has progressed 2 or 3 weeks, the protein content of the bacilli causes an outpouring of plasma. The tissues of the body then very quickly sensitize to this protein so that when tuberculin or pure tuberculoprotein is applied to a slight abrasion on the skin, or introduced into its layers, it produces edema or induration surrounded by an area of hyperemia. In the human the tuberculin test becomes positive in 3 to 7 weeks after focalization of bacilli; the test remains positive as long as t. bacilli remains alive and liberate protein.

In addition to forming a fibrous wall, the human defense begins to lay down lime salts in the caseous material and then in the capsule so that finally a true limestone wall is built around the t. bacilli. In 25% of such lesions, the defense mechanism is not satisfied with a limestone encasement but develops a wall of true bone. In the early phase of tubercle formation some of the bacilli are carried to the regional lymph nodes, where they are entrapped. The bacilli in the lymph nodes are dealt with in the same manner as in the lung parenchyma. The original focus, with foci produced in the regional lymph nodes, constitute the primary tuberculosis complex, the first-infection type or the first phase of development of tuberculosis.

First-Infection Type Tuberculosis

This usually causes no extensive destruction of tissues and does not produce significant symptoms. About the time tuberculin test becomes positive there may be fever of from a fraction to several degrees, rarely of longer duration than 2 or 3 weeks. Increase of sedimentation rate is of short duration. Most persons who have developed the primary tuberculosis complex are unaware of its existence except when tuberculin tested. Tubercle bacilli of first infection are brought under control in infancy, in senility, or in any intervening time.

Nothing more than a positive tuberculin test is necessary to establish the diagnosis, but locating the primary complex is often difficult. A small percentage of primary foci in the lung may be located by the x-rays. About the time allergy appears, a pneumonic area may develop around the lesion. Usually after several months the pneumonic area resolves so there is no longer a shadow cast on the x-ray film. From several months to 2 or 3 years

later, however, lime may have been deposited in such quantities as to cast dense shadow. Lime may also appear in the lesions within the regional lymph nodes and cast shadows in the hilus region.

If the primary complex is in the abdomen there is no way of learning its location without opening the cavity, except in the occasional case when large quantities of lime are deposited in the mesenteric lymph nodes. Cervical lymph nodes with lime deposits may cast shadows on x-ray films. *On ordinary x-ray examination of persons who react positively to the tuberculin test, one does not locate the lesions in more than 15% of the individuals examined. Detailed x-ray* examinations in various diameters locate lesions in no more than 20 to 25%. Therefore, *there is little advantage in making x-ray films of the chests or other parts of the bodies of positive reactors, trying to find the primary complex.* Moreover, there is no advantage in knowing its location; the tuberculin test suffices to inform us of its presence somewhere in the body.

During the brief febrile period or while the sedimentation rate is increased, bed rest is indicated. Persons with the primary tuberculosis complex in the sanatorium do no better than those in a special day school for tuberculosis children, than in their homes, in the usual activities of life.

The two important procedures for every person, regardless of age, who is found to have a positive tuberculin reaction are, first, breaking contact with all persons who have tuberculosis in the contagious stage; second, having a careful examination, including x-ray films of the chest, *at the approach of adolescence and annually thereafter.*

Nature may resorb fibrous tissue and even limestone bony capsules, thus liberating upon allergic tissues living t. bacilli.

Through pasteurization ordinances, area testing of cattle, and isolation or treatment of persons with contageous tuberculosis, in many parts of the country not more than 10 to 15% of the high school girls and boys have developed first infection type of tuberculosis; in some parts less than 5%.

All children and young adults should have the tuberculin test. A positive reaction shows that the reactor has been in contact, directly or indirectly, with some person or animal suffering from tuberculosis in contagious form hitherto unsuspected.

Reinfection Type Tuberculosis

In sharp contrast to the first-infection type, the re infection type causes great destruction of tissue and is responsible for practically all the morbidity and all of the mortality. It may appear in acute or chronic forms. The acute meningitic, miliary and pneumonic forms are highly fatal; pleurisy with effusion and peritonitis are milder. A previously existing primary complex has sensitized the tissues and is the usual source of the bacilli which cause the acute disease. Diffuse tuberculous meningitis is probably always preceded by a tuberculous focus which suddenly discharges its bacilli into a ventricle of the brain or the subarachnoid space. Miliary tuberculosis is practically always dependent upon a focus from which material teeming with bacilli finds its way into a large lymph or blood vessel and, thus, throughout the body where they find lodgment on allergic tissues and there set up so many intense reactions as to overwhelm. Tuberculous pneumonia is nearly always caused by a pre-existing focus which ruptures into a main or lesser bronchus and disseminates large numbers of tubercle bacilli into all its branches. The tissues having been previously sensitized react sharply and a serious illness developes immediately. In the lung of the infant, necrosis causes large cavities in a few weeks.

Chronic reinfection pulmonary tuberculosis sooner or later is apt to communicate with the bronchial tree and disseminate tubercle bacilli to the outside world. An average of 2 or 3 years passes afetr the lesion may be located by roentgen examination before any symptom appear, and usually before there are any significant physical signs.

When symptoms bring the patient to the physician for examination, 80 to 85% of such persons already have the disease in the moderately or far advanced stage. Most are already disseminating tubercle bacilli to their associates, and in most, if treatment is successful at all, it is ouly after several years of isolation and surgical procedures. Our tuberculosis program must consist of administering the tuberculin test to all apparently healthy human beings. X-ray films of the chest and other necessary examinations should be made of all adult positive reactors, in order to find the lesions which are already extensive and communicable and those of recent development.

Prior to adolescence the reinfection form of pulmonary tuberculosis in a communicable stage is extremely rare—1 in 2000 to 4000 grade school children. *Therefore one can dispense with making x-ray examinations of the chests of children with a reasonable degree of safety.* Among high-school children, one may expect to find a pulmonary lesion of the reinfection type once in every 500 to 800 positive reactors; in the third decade of life and thereafter such a lesion may be found in every 100 to 200 positive tuberculin reactors.

Collapse therapy is more valuable than all other procedures of all time combined.

Treatment should be begun before the disease is advanced, when there is less likelihood that the lung has become adherent to the chest wall; if cavities are not present in the area of disease, there is dess danger of empyema or air embolus. For those who have minimal progressive pulmonary tuberculosis in the pre-symptom stage artificial pneumothorax may be employed successfully, most persons in this group discontinuing their work.

When tuberculosis is found to co-exist with pregnancy often artificial pneumothorax brings the lesion under control, and delivery is effected as in a normal woman. It the lesion is well collapsed, it is not necessary in most cases to isolate the mother from the infant.

In the minimal or the early, moderately advanced stage a lung should be kept collapsed at least 3 years;far advanced cases, with cavities at least 5 years ond in some cases for the remainder of life.

If impossible to institute artificial pneumothorax, interruption of the phrenic nerve on the side of the disease is of great value; in conjunction with artificial pneumothorax a better collapse is obtained after the diaphragm is elevated; also in conjunction with extrapleural thoracoplasty.

When artificial pneumothorax is impossible it is usually best, if the contralateral lung is reasonably free from disease to proceed at once to removal of the ribs on the affected side, thus allowing the chest wall to fall in and collapse the lung. When disease is confined to the apices of both lungs and cavities are present which insure positive sputum, both sides may be partially collapsed by surgery with great advantage. This is an excellent public health measure in that it frequently results in complete disappearance of sputum and thus renders the patient a safe human associate.

We should stop wasting time in our laboratories on

(Continued on Page 43)

Surgical Observations

A Column Conducted by

THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

HAND INJURIES WITH TENDON INVOLVEMENT

An injury of the hand is a serious matter, whatever the occupation of the individual. Infection greatly increases the dangers to life, and the likelihood of loss of function is increased many fold. The doctor who treats this hand has a difficult problem.

An injury of the hand, which incapacitates the member for a few days, makes one realize how serious a hand injury would be if it resulted in permanent disability.

When tendons are severed by a knife wound, or are torn by violence, many serious issues are involved. Many hand injuries prevent patients from resuming occupations which dextrous manipulations acquired by long training and experience which have enabled these individuals to do unusual work and gain unusual rewards. Loss of the proper use of even a finger might force the patient to seek other work, or to learn a new trade or occupation. In either event, it may be a tragedy for that patient.

Tendons sheaths are tunnels through which the tendons glide. These tendons, when traumatized or infected, swell, and constriction by the sheaths interferes with the blood supply. At best, this may cause adhesions. The tendons may even slough out. The adhesions that result from this, even if the tendons are not badly injured, are often disastrous to function.

If a severed tendon is sutured, adhesions may form between the tendon sheaths and the tendons with impairment of function, which is often very troublesome.

In case of this kind, it is necessary to restore the full gliding surface of the tendon sheaths and then transplant an autogenous tendon, such as one from the palmaris longus, in place of the injured tendon. Only in this way sometimes is it possible to get a restoration of function of the finger.

To restore the tendon sheaths it is necessary to hold the surfaces apart during the healing process, by use of a foreign body which will not cause tissue reaction, and will not tend to produce infection. It must be of some material which will permit the tendon sheaths to reform a smooth, gliding surface which will function properly when a new tendon has been placed in this sheath. For this purpose glass rods are very satisfactory. There is danger that glass rods will break. Celloidin rods have been used with some success. Either glass or celloidin may be satisfactory.

Thatcher of Portland, Oregon, is now using stainless steel rods instead of glass leaving them in place for three weeks. His observation is that there is no tissue reaction from this metal. Such rods will not break and they serve as splints for the fingers. On removal of the rod, the inner surface of the lining of the tendon sheath will again have a smooth, gliding surface through which the transplanted tendon will easily glide and function satisfactorily.

In treating injuries of the hand, it is, of course, necessary that the patient be seen immediately after the accident. If this is not done, disaster may result, no matter how good the care afterwards. The first 24 hours of treatment of a hand injury governs, to a large extent, the outcome. No surgical treatment can repair the damage done in some cases in which infection has been allowed to progress without proper attention for the first 24 hours after injury.

When infection has developed it is necessary to promote subsidence before any operative procedures can be undertaken.

After infection has cleared up and it is safe to operate, the diseased and adherent tendons are removed and a rustless steel rod is substituted of the proper size and shape to fit the tendon sheaths, but not too tightly, and bent so as to conform to the natural curve of the finger. The ends of the severed tendons are fastened to this rod and left in situ for three weeks; then the rod is removed and a tendon transplant placed in the sheath and sutured to the two ends of the severed tendon, thereby replacing the part which has been removed and restoring function to the finger. These operations should always be carried out in a bloodless field by first getting as much of the blood as possible out of the hand and forearm and then applying a tourniquet in the form of a blood pressure cuff which is pumped up to 250 or 300 mm. of mercury.

After-care is extremely important and must be carried out with the greatest possible care and attention to details. Early passive and early active motion are necessary.

In North Carolina the Industrial Commission reports that more than one-third of all accidents are hand injuries. Certainly the frequency of hand injuries and of permanent disabilities from hand injuries makes this form of accident a matter of great importance. One of the greatest troubles following even a slight hand injury is the fact that the average workman will neglect to report this at once, and often he will not have anything

done until hours later. After infection once begins and gains headway, it is often impossible to stop it before much damage is done and the patient goes through a long period of treatment and slow convalescence.

Trauma of the hands, complicated by infection, may cause many and varied disabilities. There may be additional destruction of tissue from the infection caused by sloughing due to destructive action of the organisms responsible for the infection. Infection of the tendons and tendon sheaths cause crippling adhesions; even sloughing out of the tendons, may result. The muscles may be badly damaged, also adjacent nerves, by the infection. The blood-vessels, especially veins, may be involved and also the lymphatics. When infection has cleared up we may still have a hand which is practically useless. So often we see these hands with poor circulation, stiffened fingers unable to grasp objects, disordered sensation, loss of touch and of coördination, and frequently the patient suffers great pain when attempting to use the fingers or hands.

A hand in this condition certainly taxes the ingenuity of the surgeon and requires great patience and perserverance to get any improvement whatever.

Here, as in many other things, education of the workman to the importance of attending to hand injuries immediately after they occur should be stressed. In every industrial plant the first-aid group, or the individual responsible for first aid, should be made acquainted with the fact that no hand injury should be allowed to go untreated—even for an hour. All hand injuries must be regarded as serious injuries. The patient should immediately receive the proper surgical treatment. *Most hand injuries should be hospitalized*, because only where the patient can be seen frequently and given every possible care and attention is it possible to get best results. Even with the best attention, good results are not always possible. It should be impressed upon everyone that immediate treatment of a hand injury by a skilled surgeon is necessary. Careful treatment of a hand injury which is allowed to go untreated for 24 hours may produce remarkable results; but, as a rule, no treatment, no matter how skillful can repair a lot of the damage done to a hand by 24 hours of neglect following injury.

For the purpose of compensation, the extent of disability following a hand injury is measured in terms of dollars and cents. However, no amount of money can compensate a man for the loss of the use of a good, useful hand; and those whose occupations require highly specialized manual skill, which can only come through many years of training and experience, should have heavy money awards. This skill and manual dexterity may be lost and gone forever if the function of the hand is greatly impaired.

EXTREME OBESITY FOLLOWED BY THERAPEUTIC REDUCTION OF 239 POUNDS

(J. J. SHORT, New York, in *M. A. M. A.*, Dec. 10th)

A Russian housewife, 32, applied to the Obesity Clinic for weight reduction on March 22nd, 1935. She had always been overweight. At 17, when she was married, she weighed 260 pounds. There had been no change in her mode of living. Menses had been irregular since onset, with the exception of the 3 months prior to admission. She had suffered from psoriasis since the age of 8.

Her father was of normal weight. Her mother weighed 300 and had diabetes. Her brother and one sister were obese. Two sisters and one brother died in infancy.

Her height was 63 in., weight 395½ pounds. The skin showed extensive psoriasis, b.p. 160/120.

She was given a diet, with occasional variations, of 600 calories—35 Gm. carbohydrate, 70 Gm. protein and 20 Gm. fat. Thyroid extract 3 grs. daily after the second basal metabolism test of April 9th, 1936. This was varied from time to time acording to indications. The patient followed orders faithfully throughout the entire period.

Sept. 29th she was referred for the removal of excess skin and subcutaneous tissue. At that time her weight was 177½ pounds. Over the abdomen was a large apron of skin which was removed by operation Oct. 27th. It measured 24¼ by 12¾ in. and weighed 5½ pounds. She made a good recovery and was discharged Nov. 17th, 1936, weight 156½ pounds.

The patient's health remained excellent throughout the period of reduction. At no time did she complain of hunger or weakness. There was a moderate improvement in the psoriasis, and the skin showed remarkable adaptability to the smaller proportions. At a weight of 156½ pounds she was in excellent health and spirits, and there was little, when she was clothed, to indicate that she had ever been obese.

This case would indicate that there is no limit in the extent to which excess weight may be removed by submaintenance diets, provided such diets contain adequate protein, minerals and vitamins together with moderate amounts of carbohydrate. Fats may be minimal. Vitamins are often added, as such, in concentrated form. Dairy products, such as skim milk and cottage cheese, are valuable in providing adequate calcium and phosphorus. Reductions of from 10 to 20 pounds a month over a considerable beriod have not been attended by any untoward symptoms in my experience.

Addendum:

In response to an inquiry Dr. Short writes on Dec. 28th, 1938:

"I saw the patient whose case was reported on Nov. 22, at which time her weight was 160 lbs. She is now requesting a further reduction to 140 lbs., which would be just about ideal for her height and frame."

UNTOWARD EFFECTS LARGE DOSES OF VITAMIN B1

(C. L. STEINBERG, Rochester, N. Y., in *Amer. Jl. Dig. Dis.*, Dec.)

Large doses of Vitamin B1 seem capable of irritating the peripheral nerve plates—in my own series less than 1%; however, when an individual so treated begins to complain of intense burning pain in an unsuspected area, the administration of this vitamin should be stopped.

Clinic

Conducted By
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North Carolina

ON October 29th, 1915, I was called out at 1:00 a.m. to see a 68-year-old furniture worker of rather low mentality. He stated that he had gone to an outdoor privy and while sitting on the toilet had a sensation of something biting his penis. He had no nausea or vomiting, but great general abdominal pain. His abdomen showed the most extreme rigidity I have ever seen. The patient insisted that a snake bit him on his penis, but adbitted that he saw no snake. When asked why he thought a snake would bite him in such a way from beneath a toilet seat, he replied, "He mought have thought it was a mouse!" There was no swelling or redness of the penis, nor could I find any mark of a bite. I thought he probably had an incarcerated incomplete hernia, being entirely ignorant at that time of the condition which he actually did have, and never having seen any literature on the subject. A surgeon was called in consultation, and he said the "hernia" was an undescended testicle. I supposed that I had made an egregious oversight and felt duly chagrined, but was so sleepy at that time of night that I did not adequately check the matter up at the moment. There was also a prolapse of the rectum, which was replaced, but this gave no relief. After a minute inspection of the penis, a *very* slightly reddened placed was found on the prepuce such as might be made by the chafing of clothes, but there was absolutely no swelling. The patient said he had been bitten on the end of his penis and not on the reddened area. The privy was inspected. No snakes or spiders were found, but there were many cobwebs about. The patient (whose statements may not have been entirely reliable) said he was bitten about 9:00 p.m., but had only local pain till about midnight. (If this was true, it was a very unusual feature.) We were urable to make a diagnosis at the time, though it would be easy now in the light of more recent knowledge as well as of personal experience, but agreed that the patient did not seem seriously shocked, and because of the cobwebs, merely surmised, without knowing anything about the black widow spider and the effects of its bite, that the man might have been bitten by some kind of spider, and gave him ½ grain of morphine sulfate hypodermically. His temperature was subnormal, pulse rate 92, very irregular due to his severe pain.

Five hours later his temperature was 97.2, pulse 86, respirations quiet. He felt better, but still showed board-like abdominal rigidity, especially of the right rectus muscle. Despite the surgeon's diagnosis of undescended testicle, there were two testicles in the scrotum and a mass was still felt in the inguinal canal as before, apparently an incomplete hernia! The urine showed a faint trace of albumin and a few hyaline casts, but was otherwise negative, b.p. 160/122, hgb. 82%, r.b.c. 5,150,000—no evidence of hemolysis; w.b.c. 9,280 —neutrophiles 68%, lymph. 19%, mono. 14%, transitionals 2%, eos. 1%, bas. 0. Tingling in feet and dyspnea had developed, the heart sounds a little muffied—thought he was going to die. Reflexes greatly exaggerated, especially knee jerks. Sensation of touch normal, also ability to distinguis between sharp and dull. Muscle strength, gait, station, pupils and coördination normal.

The next day his feet still tingled and knee jerks were exaggerated.

Nine days later he complained of poor vision, and called white things blue. An ophthalmologist found only presbyopia. Very garrulous. All symptoms of bite gone. Careless of personal appearance. Slurring, but not scanning speech.

Diagnosis: It is easy to say in the light of present-day knowledge that this patient had arachnidism due to the bite of the black widow spider, *Latrodectus mactans*. Also he had a prolapse of the rectum, an incomplete right inguinal hernia and a diastolic hypertension. Also his mental condition suggested either arteriosclerotic dementia or an early paresis. This was before the state laboratory was doing Wassermanns, and we had no serologic facilities so there is nothing to report on that.

On August 16th, 1934, Dr. George T. Wood, knowing of my interest in such cases, asked me to see a patient in his office, a high school boy of 16 who complained of pains in his legs. The boy stated that at 8:30 the night before he went to an outdoor privy and his bowels moved but about the time he got through he felt as if something stung him on the penis. It felt like a little sharp pinch. Soon he began to hurt in the groins, so he went back to see what might have bitten him. Momentarily by a match flame he saw a black spider the size of his thumb nail. The pain in his groins came on two or three minutes after the bite. In less than an hour he had severe general abdominal pain *spreading to his back, hips and down his legs* (thus differentiating the condition from an intraäbdominal one.) The pain did not get into his chest muscles or arms, as it so often does. He vomited two hours after the bite, again 6 hours after that, and a third time a few hours later. He had no nausea when I saw him, but

complained of great weakness in his legs, especially in the joints, when he tried to stand. His bowels had not moved since the bite despite a purgative and enema. He had some codein in the house and took ½ grain by mouth without relief. Then he called another physician who gave him a hypodermic of morphine. His temperature in Dr. Wood's office was 99.2, pulse 92—strong and regular, respiration 24 and easy, b.p. 148/100.

It is of much interest that 6 weeks previously he had tetanus antitoxin. The diagnosis of black widow spider bite is, of course, obvious. It is unusual, however, for the victim of such a bite to be able to come to a doctor's office 18 hours after the bite. One might speculate as to whether the antibodies to one neurotoxin (tetanotoxin) could have neutralized to some degree another neurotoxin, the venom of the black widow! This boy showed moderate abdominal rigidity, and a small pink point on the glans without inflammation or swelling, the site of the bite. His knee jerks were slightly increased and there was a suggestion of ankle clonus on the left, none on the right.

The present-day treatment of black widow spider bite is much more effective than the treatment we used in 1915. Morphine may be given at once, but calcium gluconate intravenously (20 c.c. of a 10 or even 20% solution) has an almost specific effect. Placing the patient in a warm bath is of value, too. In the rare case where these measures fail, magnesium sulfate intravenously is of great help. (20 c.c. of a 25% solution).

THIRD SKIN

(Abstract in *Am. Jl. of Pharmacy*, Oct.)

This patented preparation is claimed to protect the hands against dirt, grease, paint, oil, ink, gasoline, acids, alkalis, and so on. It is said to be invisible and elastic permits the passage of perspiration without loss of its protective properties and to persist in this property for at least 8 hours. It may be removed by washing with water. This "third skin" consists of:

Sodium soap	128 oz.
Water glass	110
Glycerine	100
Potato starch	100
Distilled water	2
Cottonseed oil	32 l.s
Perfume, if desired, a few drops	

Such a glycerine-containing preparation may be expected to be especially useful for painters, printers, gasoline-station attendants, automobile mechanics, all workers who come in daily contact with clinging substances that are difficult to remove from the skin. The coating may be used on any part of the skin where protection is desided. The inventor designates his invention as the "third skin" because it covers the two natural skins of the body.

Clinic

Conducted By
PAUL F. WHITAKER, M.D.
Kinston, N. C.

A 40 year-old jeweler was first seen on April 8th, 1935, with a chief complaint of headache, practically constant for seven months, chiefly right occipital, radiating into the frontal region, often becoming generalized. The dull ache after persisting for hours would become severe and throbbing unless resort was made to headache remedies. Often he would awaken with it; at times it would begin in the afternoon. A nose-and-throat man had been consulted the previous October, and the sinuses found negative. Glasses failed to relieve. Two months later he consulted an optometrist who changed his glasses without benefit. A chiropractor who had been in charge for six weeks before we were consulted had found by x-ray examination that "his head does not rest on his spine properly and the resulting nerve pressure is the cause of his headache;" "adjustments" had given no relief. A competent dentist had x-rayed his teeth with negative results. The patient stated that he had had sleepy spells since 1920.

The cardiorespiratory, gastrointestinal and genitourinary histories were all negative. He had scarlet fever and diphtheria in childhood. There were some paresthesias in the hands and feet. The tonsils had been removed two years previously. The personal history is negative. His father died of tuberculosis at the age of 56.

Inspection revealed a middle-aged man, bald with a listless expression. The skin, particularly of the extremities, was dry and rough. Careful complete examination, including rectal digital revealed no evidence of disease. Tonsils removed cleanly, blood pressure 110/70.

Red cell count 4,570,000, hemoglobin 90%, color index 1%, white cell count 6,600—56 polys, 2 large mononuclears, 28 small mononuclears, 3 endothelial leukocytes and 1 eosinophile; no malaria parasites, blood Wassermann negative. The urea was 28 mg. and sugar 82 mg. per 100 c.c. of blood. Urinalysis on morning, noon and night specimens showed a good variation in specific gravity and all specimens were negative both chemically and microscopically. Gastric analysis revealed a total acidity of 10, 22, 32 and 34, a free HCl of 8, 18, 22 and 22; no lactic acid or blood. Duodenal aspirates negative. Stool examinations negative for ova, parasites and blood. Lumbar puncture negative both as to dynamics and serologic examination. Basal metabolic rate —37%.

Discussion: With the upper respiratory tract

entirely negative, properly fitted glasses failing to relieve the headache, a negative neurological examination, lumbar puncture, blood and spinal-fluid Wassermann, a rather dull expression, dry skin, history of sleepy spells for 15 years and a basal metabolic rate of —37% it was felt that hypothyroidism was probably accounting for the headaches.

Diagnosis: Hypothyroidism.

Treatment: The patient was given one grain of thyroid extract (P. D. & Co's.emphlet) three times daily. The basal metabolism on April 17th, one week later, was —24%, and there was no clinical improvement. The thyroid was increased to 6 grains daily, and the basal metabolic rate on April 24, was —19%. The patient stated that his headaches were probably not as severe but that he still suffered every day. The thyroid extract was increased to 9 grains a day, and the b.m.r. on May 1st was —1%, the headache had entirely disappeared and the patient said he was feeling like a new man, that he must have been feeling bad without realizing it. His energy and capacity for work were much increased. On May 10th b.m.r. having gone up to +8%, the thyroid extract was reduced to 8 grains a day. Twelve days later the b.m.r. was +1%. It was considered that his daily requirement of thyroid had been established. On return in 30 days for another metabolism determination, the patient was feeling well, the headache had entirely ceased, and he had a much greater capacity for work. His b.m.r. was —1%.

This patient is still seen every three months for a basal metabolism determination. He continues to take thyroid extract though the dosage now required to keep him symptom-free is only 5 grains.

Note: Here was a patient considered from the standpoint of a narrow specialty. Headache is not always due to a local condition in the sinuses, to errors of refraction, or to an intracranial lesion. If this patient had been adequately studied at the time of his nose-and-throat consultation, he would have been saved the expense of the studies by the optometrist and the chiropractor, to say nothing of the needless suffering on his part.

Hypothyroidism, particularly the mild form, is a very common condition and its symptomatology is varied in their manifestations. Carefully checked basal metabolism determinations will be of valuable diagnostic aid in the diagnosis. Thyroid dosage has to be arrived at mostly by trial-and-error in each case.

A policeman went into a middle Western [illegible] ing: Who does that car at the curb below [illegible]? A [illegible] replied dryly: "The car belongs to the [illegible] Corporation, the overcoat on the seat to the Pacific Outfitting Company, the pup on the floor, he's mine!"

Traumatic Rupture of Mesentery and Gangrene of Ileum With Late Developing Symptoms

William E. Cornwell, M.D., Charlotte, N. C.

A man admitted by wheel-chair to the hospital had sustained the following injuries when the truck in which he was riding overturned: Abrasions of moderate degree about scalp, left ear and left iliac region with a moderate-size hematoma over the left hip; a laceration between the web of the toes and on the ball of the left foot. He was given 1500 units of anti-tetanus serum and several through-and-through rubber-tissue drains were placed in the foot lacerations, then dressing applied.

On admission the patient complained of very slight pain in the left lower quadrant of the abdomen, but this was fleeting and not disturbing. He was returned to his room and the following day x-ray examination of the left foot showed comminuted fractures of the first phalanges of the 2nd, 3rd, 4th and 5th toes.

Urine examination immediately following accident was negative.

The patient remained in the hospital for 22½ hours in apparently good condition, normal temperature, pulse and respiration; and no marked tenderness, muscular resistance or fluid wave could be elicited, at least not sufficient to warrant abdominal exploration.

However, 22 hours after the accident the patient suddenly complained of intense abdominal pain, rigidity and distention with onset of vomiting of material of a dark brown color. Temp. soared to 103 for first time, pulse to 136 per minute and the general condition looked bad. White cell count was 11,800, polys, 82%. Supportive treatment with 1500 c.c. normal saline hypodermoclysis and 500 c.c. whole blood in the vein followed with 500 c.c. normal saline.

Abdominal exploration was deemed necessary at this time, 27 hours after the injuries, although it was thought that a rapid open-and-close with drainage would suffice in face of a rapidly advancing peritonitis. Dr. T. C. Bost opened the abdomen through a low mid-line incision and two lacerations of the mesentery were noted—one 2 inches the other about 4½ inches long and through the longer rent a loop of 4 feet of gangrenous ileum was strangulated. This was pulled through into its normal position and the gangrenous gut resected with end-to-end anastomosis and suturing of both rents in the mesentery. A cigarette drain was placed in the pelvis and abdomen closed. Fluids were given by vein but to no avail, the patient dying 32½ hours after being injured. There was

no evidence of either peritonitis or hemorrhage in the abdomen, however the tissues were considerably dehydrated.

This case is interesting from the standpoint of the unusual type of injury—a laceration of the mesentery—also because of the lateness of the appearance of any symptoms of intraäbdominal injury. Laceration of the mesentery as result of a blow on the abdomen has been reported. It is comparable to a concussion with a pull on the mesentery from the intestine. Abdominal exploration might have been done before obstruction or gangrene took place, but certainly no suggestive symptoms were complained of, and no signs indicative of severe visceral injury could be made out.

WOULD YOU RECOGNIZE A CASE OF GLAUCOMA?
(S. C. HOWELL, Atlanta, *Jl. Med. Asso. Ga.*, Dec.)

The principal cause of incurable blindness is glaucoma. Glaucoma is characterized by increased tension of the eyeball with pain in or about the eye and diminution of vision in persons past 40. The victim sees everything hazily, has to change spectacles frequently, and is found to be using glasses much more powerful than ought to be necessary at his age; he is apt to see colored rings or a halo about lights.

Usually there is dull pain in the eyes and forehead, and maybe consciousness that both his central and peripheral vision are defective; but it is only when his physician chances to see him during an attack that any objective sign of glaucoma can be detected.

The slow progress of simple glaucoma is in contrast to the outburst of the acute form. The patient may have gone to bed apparently well; but is awakened by severe pain in the forehead and in one eye. Almost immediately the eyeball becomes acutely congested and feels as if it were too large for the socket; the eyelids are edematous; there is profuse lacrimation; and the eye rapidly becomes dim; there is persistent retching and vomiting. In some cases the second eye is attacked a few hours after the first, and the condition becomes critical in the extreme.

The pronounced symptoms being so common as accompaniments of an ordinary gastrointestinal attack may deceive the doctor into thinking the attack to be digestive. The practitioner must be on his guard not to misinterpret for to do so is disastrous. If atopin is instilled, the symptoms are aggravated, and the patient's chances of recovering sight are materially lessened.

DIGITALIS DETERIORATION
(H. B. HAAG Richmond in *Amer. Jl. Pharmacy*, Oct.)

The deterioration of digitalis probably rests chiefly upon hydrolysis of the active principles. Evidence of deterioration is shown much more definitely by the frog method than by the cat method. It should be established once and for all and to the satisfaction of all concerned, if possible, which of these two methods more clearly reflects the clinical efficiency of digitalis, particularly on aging.

Both by the frog method and by the cat method the dry powdered digitalis leaf seems to be stable for many years. The same probably holds for tablets, capsules and pills of the dry leaf. To be entirely safe and free from criticism digitalis infusion should not be dispensed after one week of storage and the supply of tincture of digitalis should be replenished every six months to one year.

DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

I NOMINATE WEE GILLIS

THE PRESIDENT of the United States and all others high in authority in the Capital of the Nation will bear cheerful testimony to the validity of the statement that I have seldom sought high office in the present administration and that I have infrequently annoyed them by unrequested advice. I have felt obliged to inform the President each time he has indicated to me his desire that I become a member of his offical family that I regarded my duty to my patients to be my primal and fundamental devotion. For that reason undoubtedly I have continued to reside in Richmond rather than in Washington. What heartaches the numerous declinations have caused me no one but I, and I alone, can ever know. A whispered, interpolated sentence in the Hippocratic avowal made by me years ago was that I would not be beguiled from my chosen labour even by the proffer of high political pedestalization on the north bank of the Potomac. And I have been true to that avowal. Every proffer of elevated placement of me in the Federal mechanization has been instantly declined by me. I am not without respect either for the conception or the created civic structure of the Founding Fathers. But in my early manhood I swore by the host on high Olympus that I should not incline even one ear to the music of a Capitoline Siren who would insidiously woo me from my devoted ministrations. And that holy oath I have kept throughout the years.

And not one of those who holds membership in the group of Political Philanthropists can veraciously asseverate that I have ever harassed him with the nomination of my friends and fellow sufferers for stations at the sustaining trough along which the official pabulation unceasingly flows. I have seldom, if ever, made such a suggestion unless it were urgently requested. I have been guided by the feeling that those who are engaged in the Federal eleemosynary activities should be of one heart and one mind—a kindred group—and I have been restrained by the fear that any nomination of mine might be uncongenial if not unpalatable and indigestible.

But at long last I have overcome those chronic inhibitions, and I now stand up boldly and publicly proffer to the President of the United States the name of my nominee for appointment to the vacancy on the bench of the Supreme Court of the

United States. I nominate, Mr. President, Wee Gillis. Objection may be made that his citizenship may be uncertain. He may indeed be still living on the side of a Scotch hill; but he is a citizen of the wide, wide world, and he dwells in sweet neighbourly concordance with those who live in the lowlands as well as with those whose homes are amidst the crags and the stags. Wee Gillis is possessed of innate judiciousness. He is physically and mentally at home wherever he be. He is wholly unsnobbish. He is adaptable. If he cannot adequately exercise his lungs by deep inspirations, why, he makes up for the lack merely by holding his breath. What procedure could be more sensible or more economic? And Wee Gillis sticks to his knitting—or to his bag-pipe. He does only what he is trained to do. In the vacant seat amongst the Federal Judices I insist, Mr. President, that you seat Wee Gillis. He will stick to his judging, and the people will like his judging, whether they be Old Dealers or New Dealers. Give us, Mr. President, Wee Gillis. If his name should sound too brief for judicial dignity he could be sworn in by his full Caledonian appellation.

Indicted?

I know so little about legal procedure that I do not know whether all the members of the American Medical Association stand indicted by the United States Government or only certain designated officials of the Association. Dr. Irvin Abell, the President of the American Medical Association, should be by inheritance trained to endure prosecution if not persecution. His coreligionists are now being subjected to mass governmental persecution in many parts of the world. And Dr. Morris Fishbein, editor of the weekly journal of the Association, should be able to smile at mere prosecution. In most of the European countries the anti-Semitic urge is erasing many of his fellow-Jews from the blackboard without troubling them with a legal trial. Certainly there is no feeling of racial or religious hostility in our country! Who says there is? Our officials are merely determined to do their duty. That's all. I believe there are probably midway between 100,000 and 150,000 members of the Association. I earnestly hope the action of the Honourable Thurman Wesley Arnold, Assistant Attorney-General of the United States, and the recent pronouncement by the Federal Grand Jury of the District of Columbia, may involve each of us members of the American Medical Association. If I am to be indicted I prefer that I be arrainged as near to the chief seat of Federal Authority as possible and that the action against me be directed by him who sits high in authority. I much prefer being charged with conduct so digressive as to command the attention of the Federal Department of Justice rather than a magisterial or a police justice arraignment for disruption of the peace and dignity of the Commonwealth.

A native of my native state was once indicted in the city of Washington by the United States Government of which he was then a considerable part. Although he was at the time of his trial President of the United States of America he escaped conviction by the skin of his teeth. His name was, of course, Andrew Johnson, and the little house in which he was born still stands in Raleigh, unless it has at last been shaken to pieces by the frequent changes of location to which it has been subjected. And Andrew was bit by his own dog, or dogs. Those with whom he had lived in intimate political association caught him somewhat off-guard and sunk their canines deep into his calves. Those against whom he had been venting his spleen and amongst whom he had lived in the South, and amongst whom he had become at last literate and eminent, finally had to come to his rescue—and eventually to the resuscitation of the innate nobility of his character. If the might of the government of the United States was turned at a crisis in our history against the head of the government who had been since his childhood its stout defender, often in a community in which the majority were against him, we physicians need not feel shocked or humiliated or embarrassed or persecuted by the instant attitude of the Federal Government towards us. If the government were once bent on convicting the President of the United States of criminal conduct, why should it not be anxious to convict each of us of criminal conduct and to lodge each of us in prison for the rest of our days? The same government that now has us doctors on the hip sent to prison Dr. Mudd merely for ministering to a man with a broken leg. In convicting him and in hanging Mrs. Surratt the Federal Goverment was merely warming up for its later attention to Andrew Johnson, President of the United States of America.

But, I am glad we doctors are corporately indicted by our own United States government. I hope earnestly the procedure will catch each one of us individually. If we are crooks, thieves, grafters and racketeers, who have banded ourselves together to the end that the people who fall sick may continue to suffer without relief and finally to die because of lack of medical care, then we should be publicly crucified and hoisted high as objects of public derision. During criminal trials evidence difficult to deal with not infrequently

finds vocalization in the Temple of Justice. It may come to light during the procedure propelled by the Honourable Thurman Wesley Arnold that the health of the people of the Nation has been unusually good throughout the last fiscal year and the death rate unprecedently low. And during the last fiscal year the health of the people of New York City has been more wholesome than ever before and the death rate lower than ever before since that populous city has had a health department. All such statistics are disturbing to the theory of the late Dr. Malthus and the data may cause momentary embarrassment to the Attorney-General's many-degreed Assistant prosecutor.

Wouldn't it be a joke on us doctors if he should succeed, as he may easily do, in convicting us of wilfully and purposefully and maliciously violating the legislative act named for the statesman-brother of General William Tecumseh Sherman? If the anti-combination law had almost any other name it would not be less popular down in this lately rebellious region. And if we doctors cannot formulate the constitutions and the by-laws of our own medical organizations, taking into membership whom we please and casting out from further communion with us whom we would, then we should know that fact as soon as possible. If the United States government is to assume censorship authority over medical organizations, it may soon extend its authority to other organizations — finally to the churches.

But I rejoice that we are to be prosecuted by the Honourable Thurman Wesley Arnold. What names could be historically better than the first two-thirds of his name? In my boyhood days an old man from the midwest by the name of Thurman joined Grover Cleveland in an effort to change the inhabitants of the White House. And two Wesley brothers still have profound influence amongst us.

Within a couple of days the more plutocratic members of the present political structure will assemble themselves around festive tables throughout the Nation for the purpose of making obeisance to the memory of my recent fellow-citizen, Andrew Jackson—duellist, judge, general, President, and for many years the world's most raucous, truculent and successful democrat. But I infer from the none-too-candid press references to the nation-wide feastings that the Farleyian purpose of the congregatings is not so much to fill the gastro-intestinal tracts of the feasters as to make extractions from their plethoric political purses. Here in Richmond the Jacksonian assemblage is to be addressed by our distinguished prosecutor, the Honourable Thurman Wesley Arnold, Assistant Attorney-General of the United States of America. True to his avowal, however, he is sticking stoutly to his official duties in the District until the setting of the sun and for that reason the feasting cannot begin until the shades of night are upon our ancient city. What if the food is to cost the patriots $25.00 a plate? If there should be any tendency to scrutinize too closely the proffered pabulum the assembled office-holders should bear in mind that they are to be addressed by the only official of the United States Government who ever indicted all the doctors in our country. That constitutes a distinction both for the Honourable Thurman Wesley Arnold and for the assembled upholders of Federal righteousness who will be privileged to hear him. And the Prosecutor's auditors will be grateful, too—to be sure they will—that Mr. Farley is serving food to them here in Richmond at $25.00 a plate, instead of at $100.00 a person, as they would be assessed were they worshiping Old Hickory's memory in Washington. What do you suppose Andrew thinks of the cost of the food in these parlous times? There must have been many occasions in his life when he had to feed himself for less than twenty-five cents a day. But the times have changed, my friends, and Old Andrew's little rural country has evolved into an $80,000,000,000 Nation, with high-priced food and high-priced democracy, too. All good citizens should come to the aid of the Honourable Thurman Wesley Arnold, Assistant Attorney-General of the United States of America, in his patriotic enreavor to rid our country of its medical buccaneers. If high-salaried Federal officials, who go to their offices for a few hours several of the days of each week, should not be concerned about the quality and the quantity of the service we doctors are rendering the people of our country, who should be? I ask you again, my friends, who should be?

But I am glad that we are to be prosecuted by a well-fed prosecutor. I have long been of the opinion that the individual who has good digestion and good food can be neither vindictive nor revolutionary. The revolutionary attitude is related to the empty stomach. No prosecutor who lives on twenty-five-dollar-a-meal food can enjoy persecuting his fellow-mortal, even if his fellow-creature be only a doctor.

Peptic Ulcer Treated by Posterior Pituitary Extract —Metz, M. H., and Lackey, R. W., Dallas, *Dallas Med. Jl. Apr.*) report cure in 24 of 28 such cases.

Their attention was called to possibility of benefit from such treatment by excessive urinary secretion in cases of peptic ulcer. The fresh extract was given hypodermically, orally and intranasally. The latter method is recommended.

TUBERCULOSIS

P. P. McCain, M. D., *Editor*, Sanatorium, N. C.

The Control of Tuberculosis

In this number, on page 13 will be found an abstract of an excellent article by Dr. J. A. Myers which every practicing physician should read. Dr. Myers was president of the National Tuberculosis Association last year and probably has done more than anyone else to teach the medical profession and the public the fundamentals of control of tuberculosis.

Some consider Dr. Myers as extreme in his views that children with positive tuberculin reactions do not need x-ray examination until they approach adolescence, and that those with primary lesions in the inflammatory or caseous stage do not need bed rest or sanatorium treatment. All will agree, however, that all children should be given the tuberculin test, that the source of the infection should be traced and contact broken by isolation of the open cases; also that annual x-ray studies should be made after adolescence.

Dr. Myers puts the proper emphasis upon the necessity of studying those *apparently well* through the use of the tuberculin test and by x-ray examinations of positive reactors, instead of waiting for the appearance of symptoms, physical signs and positive sputum; since 80 to 85% of tuberculosis victims will be in the advanced and communicable stage if the disease is not diagnosed until the patients are sick enough to consult a physician. For practical purposes, however, we should concentrate on 1) those who are more likely to have the disease, and 2) those who are more likely to spread the infection among the especially susceptible. These include:

1. Those with suspicious symptoms.
2. Those in contact with open cases of tuberculosis.
3. High school and college students.
4. School teachers, nurse maids, house servants, cooks and other food handlers.

Last year in one North Carolina school 15% of the high school children gave positive tuberculin reactions, while 45% of the students in the room of one of the grade teacher's reacted positively. An examination of this teacher showed that she had active tuberculosis with positive sputum!

It is very rarely that tuberculosis is discovered in the early stage except through the study of the apparently well. Its discovery early, in the first infection or in the minimal re-infection stage, will make it possible to cure most in a comparatively short length of time, and will prevent infection of others. Many can be cured at home at little cost either to family or to State or county.

Dr. Myers also well emphasizes the necessity of isolating those with positive sputum. There is no hope of controlling the disease so long as communicable cases remain in crowded homes under insanitary conditions. Those who are able to do so should go to private physicians for diagnosis and for treatment, but we feel that the State and the counties should provide beds for those who are unable to meet the cost of care in private institutions—the State to provide the beds and all facilities for those who need special forms of treatment until it is safe for them to return home; the counties to provide beds for those who are not suitable for collapse therapy and who only need bed rest, symptomatic treatment and isolation. The latter can be provided at considerably less cost than the former.

The National Tuberculosis Association and the United States Public Health Service agree that it is necessary to have two beds per annual death from tuberculosis before a control program in a given community can be effective. In North Carolina at the two State sanatoria and the three State hospitals for the insane, at 16 county sanatoria and at eight private sanatoria, there are a total of 2,131 beds—1,693 less than an average of two per annual death. We feel that the State should build another sanatorium of 350 or 400 beds somewhere in eastern North Carolina so that sanatorium facilities will be equally available to all sections of our State for diagnosis and therapy, and that the additional beds should be provided by the counties.

As more and more cases are found in the early, non-contagious stage fewer sanatorium beds will be needed. The full coöperation of all practicing physicians is essential for the control of tuberculosis. The tuberculin test can be easily given and interpreted. The Extension Department of the North Carolina Sanatorium gladly furnishes tuberculin without charge to any physician in the State requesting it. The two State sanatoria and some of the county sanatoria furnish free consultation service to physicians for their patients who are unable to afford private consultants. X-ray facilities are now available in almost every county of the State. The two State sanatoria, and some of the county sanatoria also, gladly attempt to assist doctors who wish the service with the interpretation of doubtful chest films. The Extension Department of the Sanatorium also furnishes four traveling physicians who work in coöperation with private physicians, school physicians and county health departments in the conduct of tuberculosis clinics in the various counties of the State. Great

improvement in recent years in fluoroscopic equipment makes it possible for a physician trained in fluoroscopic technic to detect the great majority of minimal, and practically all advanced cases of tuberculosis. The traveling clinicians of the Extension Department of the N. C. Sanatorium are equipped with portable fluoroscopes, making unnecessary the making of x-ray films except in doubtful and positive cases, the latter for keeping record of progress as a guide to treatment.

OBSTETRICS

Ivan Marriott Procter, M.D., F.A.C.S., *Editor*
and
Kenneth Dickinson, M.D., Raleigh, N. C.
Department of Obstetrics and Gynecology
Mary Elizabeth Hospital

The Problem of Sterility

Severe trauma, both psychological and physiological, is sustained by the woman and man who desire children but can not have them; and, unfortunately, this situation arises with enough frequency to constitute a problem.

In the Mary Elizabeth Hospital we have recognized the truth of Meaker's observation, that the causative factors in the sterility of any one couple are rarely confined to one partner. So in order that no aspect of the problem be overlooked, we have devised the following scheme of investigation (after Meaker):

1. Complete physical and laboratory examination with competent medical consultation where indicated.

2. Special gynecological examination with particular attention to the condition of the vagina, cervix, uterus, tubes and ovaries (includes study of *pH* of vaginal and cervical secretions).

3. Hormonal, glandular and metabolic study including b.m.r. (three readings) and the galactose tolerance test.

4. Endometrial biopsy as an indicator of ovulatory activity.

5. Rubin test for tubal patency.

6. Study of the male sperm both in bottle specimen and in vagina and cervix (Huhner). This includes study of morphology in the stained specimen, motility and sperm count.

Some idea of the diversity of this problem was obtained from a recent, and as yet incomplete, study of 121 cases of sterility in this clinic. The statistics accumulated over many years do not as yet warrant any conclusions, but they serve to emphasize the comprehensiveness necessary. One thing about them seems to be evident and that is the preponderance of the local, visible and, therefore, understandable factors that might well be the cause of sterility in couples where the degree of fertility is mutually low. We believe that too often these obvious and simpler deviations from normal are overlooked or neglected in our haste to treat everything gynecological with hormone or vitamin preparations.

Pathology of Cervix

1. Approximately 50% of these cases were found to have definite pathology in the cervix in the form of erosion, endocervicitis, hypertrophy, excessive, tenacious discharges.

Reaction of the Cervix

2. In the 76 cases in which this test was made: 41 cervices were acid in reaction, 34 were alkaline, 1 was neutral.

Position of the Cervix

3. In 74 cases in which these data were recorded, the cervix in 11 was sharply anterior, in 13 in midposition, in 50 in the normal posterior position.

Position of the Uterus
Fundal Pathology

4. In the 113 cases in which these data were definite, 15 uteri were retroverted to an extreme degree—some having the fundus fixed in the posterior cul-de-sac—14 retroverted to a second or third degree; 62 were in the normal anterior position. Two uteri had definite fibromyoma; 9 were immovable or drawn to the right or left by recent or old inflammatory reaction; 3 uteri gave excessive pain on pressure and manipulation; 3 were infantile and five showed chronic passive congestion.

Ovaries

5. In 42 cases the ovaries were described as abnormal; in 11 cystic, in 13 excessively tender, in 8 fixed and immovable.

Reaction of the Vagina

6. In 72 cases with available data, the reaction of the vagina was acid in 71, alkaline in 1.

Tubal Patency

7. In 60 cases where data were available, 40 showed tubal patency as indicated by the Rubin test; in 13 patency was impaired as indicated by high pressures and atypical curves; in 7 the tubes were closed as shown by a mercury height of 200 millimeters, no fluctuation and the absence of shoulder pain.

General Physical Condition

8. In 12 cases only could poor general health, low b.m.r., over-weight, badly infected tonsils and teeth, incipient tuberculosis *et cetera* be said to overshadow strictly local factors. In addition to

these there were 9 cases in which the hemoglobin was below 75%.

Previous Operations

9. In 27 cases some previous genecological operation, such as removal of an ovarian cyst, suspension of the uterus, et cetera had been performed.

Previous Diseases

10 There were 40 cases giving a history of mumps and one in which a frank history of gonorrhea was obtainable.

Menstrual Flow

11. Eighty cases gave a history indicative of a moderate flow, 8 of scant menstruation, 10 of profuse flow, and in 6 cases clots the size of the thumb were passed.

Duration Menstruation

12. In 80 cases menstruation lasted from three to five days: 67 were of the usual 28-day type, while only 7 were said to be totally irregular.

Catamenia

13. In 84 cases catamina was normal at 12 to 15 years; 12 were delayed to the 16th and 3 to the 17th year.

These statistics are incomplete and need careful analysis. It would be grossly unfair to draw from them any but the most tentative conclusions. It seems warrantable to very cautiously make the following observations:

The frequency of strictly local abnormalities in these cases is great. Special thought should be given particularly to the cervix, both as to its pathology and his *pH*. The same is true of the position of the cervix because, where degree of fertility is low, the cervix in a sharply anterior position with the os remote from the seminal pool might well be the cause of sterility. A similar speculation concerning the body of the uterus is also possible, since the retroverted or chronically congested uterus with old or recent inflammation in the parametrial tissue is not the ideal environment for a development that in these women is at best doubtful. Chronic passive congestion and inflammation may involve ovarian function as well.

The Rubin test is of great value in diagnosis and treatment and should be a routine procedure in all of these cases. However, there is a tendency to evaluate it too highly, even to the exclusion of other valuable procedures. This series, with only 7 cases showing a loss of tubal patency, would seem to indicate that there are many more normal tubes than abnormal.

Much attention has been given to endocrine dyscrasias such as thyroid and pituitary stigmata. Much reliance has been placed on proprietary hormone preparations in the treatment of this condition. In this series, in less than 12 cases could this be considered an important factor. And if the same problem is approached indirectly as shown by delayed catamenia, menstrual irregularities, excessive or prolonged flow from any cause whatever, it is seen the average age, the normal rhythm, the normal quantity of flow predominates by a wide margin in each group.

The Husband

The part played by the husband in the sterility problem has been grossly and too often neglected. We have had many patients present themselves seeking help for sterility after consulting several physicians for examination and treatment. Frequently dilatation and curettage, cervical operation, even abdominal sections, have been done when the husband has not been seen nor his semen or prostatic secretions examined. Although we have found the cause more frequently in the woman a good percentage (20) of the specimens of semen have been deficient in number, forms and activity of spermatozea. Bacteria and pus cells add to the abnormality of the semen. These findings should not be considered hopeless, but call for the services of a urologist who in a number of our cases has succeeded in correcting the local interference, and pregnancy has supervened.

We feel that a standard detailed study should be made in all of these patients, the husband to be included when the semen fails to meet requirements. Abnormalities and disease conditions should be remedied in a conservative and, whenever possible, a non-operative manner, endeavoring to assist Nature and never to hinder her.

INTERNAL MEDICINE

Paul H. Ringer, A.B., M.D., F.A.C.P., *Editor*
Asheville, N. C.

The Treatment of Cardiac Irregularities

In the *Journal of the American Medical Association* for December 17th, 1938, Dr. George Fahr, of Minneapolis, has an interesting paper on this subject.

Thomas Lewis has estimated that serious cardiac failure is accompanied by auricular fibrillation in more than half the cases. Every physician sees many cases with extrasystoles, so it would seem that cardiac irregularities are frequent and demand attention. In man, the effect of untreated auricular fibrillation is largely to increase the venous pressure and to decrease the output of blood from the ventricles during each minute; and

The reduction in ventricular output is due largely to the rapid rate of the ventricles, to the large number of pre-

mature and abortive contractions of these chambers and to auricular paralysis. Digitalis given in sufficient amounts will reduce the ventricular rate to the optimum, the number of premature and abortive [illegible] small.

When one sees a patient with auricular fibrillation for the first time, the ventricles are usually beating with an absolutely irregular rate of from 100 to 160 beats a minute. Sufficient digitalis will reduce [illegible] beats a minute, dyspnea lessens, tenderness and enlargement of the liver recede, edema begins to become absorbed and to be excreted by the [illegible] to diminish. The increased venous pressure, which is the main factor in causing the symptoms of dyspnea, edema and swelling of the liver, drops to normal values; measurements of circulation time and [illegible] that the output of the heart has approached the normal, even when serious valvular defects and myocardial damage are present.

Dr. Fahr has used preparations of digitalis lanata. I give here a note appended to his paper:

A cat unit as used in this paper is the amount of drug per kilogram of body weight necessary to kill a cat in one hour under the standard conditions of the original Hatcher-Brody method. Its value lies in the fact that, by determining the body weight of the patient, one can calculate approximately the amount necessary to obtain the optimal effect and still be safely below the level of toxic effects. Maintenance dosage can also be expressed in cat units per day. At present digitalis is standardized according to the U. S. P. XI so that 0.65 c.c. of the tincture or 0.065 Gm (1 grain) of the powdered leaf is 1 Hatcher-Brody cat unit. One-tenth Gm. (1½ grains) of the standard U. S. P. XI powder is equivalent to 1.6 Hatcher-Brody cat unit.

Dr. Fahr feels that one cat unit to each 10 pounds of body weight gives very nearly the optimal effect in lowering the ventricular rate in auricular fibrillation; and that, save in rare exceptions, this is a perfectly safe amount to give.

The pulse rate should not be allowed to go under 60 beats per minute; and in striving to get the pulse around 70, one should give the patient as much digitalis as he can stand without showing nausea, vomiting or extrasystoles.

Dr. Fahr then turns his attention to that small group of patients who have attacks of auricular fibrillation unassociated with any discoverable heart disease coming on, as a rule, under conditions of excitement or emotion. He adds that in his experience attacks of auricular fibrillation following drinking bouts are not at all uncommon, but fortunately the outlook in such cases is excellent.

Dr. Fahr feels from his own experience and that of others that quinidine is the drug of choice, although there are many competent cardiologists who do not share this view. He has used this drug for the period of 17 years; and with his associates has treated more than 500 patients, with very satisfactory results in approximately 65% of these cases. In addition, in those patients that have faithfully taken the prophylactic dose of quinidine, returns of fibrillation has been prevented.

Quinidine must be used with care for it is a drug which is toxic to the heart muscle; and in those cases in which it is desired to use quinidine and in which the heart has been decompensated, the use of quinidine should be preceded by thorough digitalization.

Dr. Fahr is thoroughly in favor of the use of quinidine in mitral stenosis with auricular fibrillation, and the drug must not be discontinued. The average case will continue with the regular rhythm on 9 grains a day. Dr. Fahr says:

We administer quinidine in 3-grain (0.2 Gr.) tablets. One tablet is given on the first day to test for intolerance. The next morning one tablet is given at 8 o'clock and another at 9; on the third day one at 8, one at 9 and one at 10 a. m. The dosage is increased one tablet a day, all the tablets being given at 8, 9, and 10 a. m. It might even be safer to use 2-grain (0.13 Gr.) tablets and proceed in the same way but more slowly. We prescribe as high as 12 tablets, or 36 grains (2.3 Gr.), a day but I would recommend that the inexperienced physician stop at a daily dose of 24 grains (1.5 Gr.). With this dose at least 50% of all cases should have regular rhythm restored. The physician should prescribe 9 grains (0.6 Gr.) a day for the purpose of maintaining the regular rhythm as long as possible. If a patient weighing 150 pounds was severely decompensated before starting the digitalis I recommend continuing with 1 cat unit a day in addition to the 9 grains of quinidine. During the treatment the patient should be in a hospital or at home with a nurse to observe the pulse and general condition until the pulse becomes regular.

Treatment of extrasystoles requires, first of all, reassurance that the condition is not serious. If possible, the patient must be free from worry and fatigue. Sedatives may be needed and medication to get rid of flatulence. If these measures fail, quinidine either alone or with strychnine three times a day will frequently be of aid, quinidine being given in doses of 3 grains three times a day.

Dr. Fahr defines paroxysmal tachycardia as "only a very rapid and regular series of extrasystoles, starting suddenly and ending just as suddenly;" and further says:

[illegible] paroxysmal tachycardia may have serious consequences in a patient who has serious cardiac disease. An ice bag over the precordium helps physically. I would first try pressing with the second and third fingers over the carotid artery at the level of the thyroid cartilage [illegible] of the cervical vertebrae—first on the right carotid and then on the left. If this doesn't stop the attack, I try pressing on the eyeballs. Sometimes the patient can stop an attack by closing the glottis after a deep inspiration and then pressing hard. A feather, tongue depressor or other object against the posterior pharynx so as to cause vomiting will also occasionally stop an attack. Weiss and Sprague recommend giving from 1 to 2 drachms (3.8 to 7.5 c.c.) of fresh syrup of ipecac to cause nausea and vomiting. If the effect is not obtained after 45 minutes, the dose is repeated or increased a little. This method is very efficacious. Acetyl-B-methylcholine has recently been recommended for the treatment of paroxysmal tachycardia of auricular or junctional origin. It is probably the

surest in its action of all the drugs recommended for treating attacks. There seems to be no great danger connected with its use. I have seen one case in which there was a short period of unconsciousness following a dose which was about double the amount I recommended in this paper. The drug is a powerful stimulator of the vagus and should not be used when there is a tendency to asthma, as its injection will bring on an attack.

Paroxysmal tachycardia is found most frequently in patients with coronary disease and may then be a serious factor. In such cases quinidine is valuable. Lewis has shown that the maximal effect on ventricular rate comes four hours after quinidine is given by mouth and most attacks will stop with a total of 15 grains.

GENERAL PRACTICE

WINGATE M. JOHNSON, M.D., *Editor*, Winston-Salem, N. C.

HEALTH CONDITIONS IN WASHINGTON

ONE of the best medical publications I see is the *Illinois Medical Journal.* The original articles furnish a well balanced diet and its editorials are uniformly vigorous, stimulating and informing. In the December number, the leading editorial is derived from a book, *Jefferson, the Forgotten Man,* by Samuel B. Pettengill, a Democratic congressman from Indiana. This is so good that I am offering some quotations from it:

"Before . . . turning over to the great white Father at Washington the welfare of 130,000,000 people, let us see how Washington, D. C., is run . . . . Let us go through the experiment station of federal government. Let us see how Uncle Sam has raised his own babies. It will be worth our while to do so before we abandon state rights to his protection.

"Every community is first of all interested in its own health. How about Washington and the health of the people who live in our own Federal city? For the year 1936, per 100,000 population, the vital statistics of Washington and the Nation show that the death rate in the District of Columbia from cancer was 26% higher than for the whole United States; 27% higher from heart disease; 49% higher and going up from pneumonia; 92% higher from tuberculosis; 106% higher from alcoholism; 119% higher from syphilis. . . Ask yourself whether the Federal government is doing such a good job in comparison with what is being done back in your home town, as to lead you to want it to take complete responsibility for the health of your own children.

"For every 1,000 live births in the District of Columbia, the infant mortality rate is 26% higher than that of the whole United States, and the maternal death rate is 91% higher. . . These are the figures of the model city of a benevolent paternalism."

Congressman Pettengill proceeds to show how Washington is also woefully lacking in the prevention of crime, in housing—"only two of the 64 American cities surveyed in this real property inventory had more houses unfit for use, or in need of major repairs"—and in educational facilities. His concluding paragraph logically follows his observations:

"When you are requested by Federal officials, whose salaries are paid by taxes taken from your own pocket, to hand over your destinies to them, it would be well to reflect upon the parable of the man in olden times who was advised to remove the beam in his own eye before he undertook to remove the mote from the eye of his neighbor."

INFLUENZA

DURING the devastating 1918-1919 epidemic of influenza, a bit of verse was given me by a patient. For many years I had mourned it as lost, until the other day my wife discovered it in a forgotten cache. Since this winter marks the twentieth anniversary of this memorable epidemic, it is an appropriate time to republish it. Although published anonymously, its author must himself have been a victim—else he could not have given such an excellent clinical description of the disease.

"The Flu"

When your back is broke and your eyes are blurred,
And your shin bones knock and your tongue is furred,
And your tonsils squeak and your hair gets dry,
And you're doggone sure that you're going to die,
And you're skeered you won't and afraid you will,
Just drag to bed and have your chill,
And pray the Lord to see you through,
For you've got the Flu, boy—you've got the Flu.

When your toes curl up and your belt goes flat,
And you're twice as mean as a Thomas cat,
And life is a long and dismal curse,
And your food all tastes like a hardboiled hearse;
When your lattice aches and your head's a-buzz,
And nothing is as it ever was,
You've got the Flu, boy—you've got the Flu.

What is it like, this Spanish Flu?
Ask me, brother, for I've been through.
It is misery out of despair;
It pulls your teeth and curls your hair;
It thins your blood and breaks your bones,
And fills your craw with groans and moans;
And, maybe, sometime you'll get well.
Some call it Flu—I call it hell.
We've had ours—have you?

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Chronic Ulcerative Colitis.

The etiology of chronic ulcerative colitis is unknown. Any break in the protective mucous lining of the colon from trauma made by the passage of some foreign body swallowed with the food, *e.g.*, a fishbone, or by an acute ulcer, may be a gateway for entrance into the deeper tissues of the intestinal wall of the many kinds of organisms normally found in the polluted colon contents. Such ulcers may be the result of pressure from masses of inspissated feces or may develop from infection.

When the deeper layers of the wall have become involved the condition is so intractable that conservative treatment in most cases proves unsatisfactory. Mackie, in a series of 85 cases, finds that bacteriologic studies have not revealed a high incidence of any single pathogenic organism. The flora varies greatly from case to case and in the same case from time to time. The disease is probably not a specific infection but may be caused by a number of bacteria that produce inflammatory disease of the colon. Once the mucosal barrier is passed the infection is probably always of mixed character.

Medical treatment based on bactericidal measures has been inadequate, for the condition is not a simple infection of the colon. In cases of anacidity the giving of hydrochloric acid at meals is helpful. Sedatives give relief when the colon is hyperactive. Some cases, however, are paradoxical, having diarrhea with hypomotility of the colon. In these a saline laxative with large fluid intake is indicated. A high-protein, low-carbohydrate diet is recommended by Mackie. Autogenous vaccines have not proved effective. The stools should be kept liquid. In only a few cases is benefit to be expected from bismuth. Colonic irrigations are not effective in combatting local infection. Over the many months of treatment, repeated examination by both x-rays and sigmoidoscope must be made to learn what progress has been made in healing of the ulcers.

Cave has written of the surgical treatment. Apart from the emergencies of acute perforation, or massive bleeding, operation is not advised until the clinical response to conservative treatment and the degree and extent of permanent damage to the colon have been learned. "Failure to achieve definite clinical improvement by conservative measures, persistence and progress of the lesions as seen at proctoscopy, and roentgenological evidence of progressive fibrosis of the colon with pseudo-polypoid degeneration of the mucosa constitute the elective indications for surgery." Appendicostomy, cecostomy and colostomy have no place in the treatment of intractable chronic ulcerative colitis for they are neither curative nor palliative. In his opinion the surgical removal of all diseased portions of the colon is the only way to cure these patients. This may mean removal of a single involved segment, or of the entire colon, according to the extent of the disease process. He reports six cases that have been cured in this way.

Jones, after a study of 68 cases of chronic ulcerative colitis, is not so sanguine about the benefits of surgery; 22, 7% of the series were operated upon with a postoperative mortality of 42%.

The writer is of the opinion that chronic ulcerative colitis is a fairly common disease in the southeastern states. For cases not responding to conservative treatment surgical removal of the colon should be considered as offering the only possibility of cure. These patients have all to gain and nothing much to lose by radical surgery. If the distal colon is defunctioned, as advocated by Devine, before radical removal of the colon is attempted the operative mortality should be materially reduced.

References

Mackie, T. T., The Medical Management of Chronic Ulcerative Colitis. *J.A.M.A.* Dec. 3, 1938, P. 2071.

Jones, T. E., The Surgical Treatment of Chronic Ulcerative Colitis *J.A.M.A.* Dec. 3, 1938, P. 2076.

Cave, H. W., The Surgical Treatment of Intractable Colitis *Ann. of Surg.*, 1938, P. 107; 806.

Devine, Sir Hugh, Operation on Defunctioned Distal Colon, *Surgery*, Feb. 1938, P. 165.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

It Can (an did) Happen Here

When some of my patients told me that a case of diphtheria had developed in a friend's child who had a recent negative Schick test, I expressed surprise. To myself I wondered if there had not been an error somewhere. I recall reading Schick's article in Brenneman's *Pediatrics* in which the statement is made that in a series of 20,000 children negative to the Schick test only 18 cases of diphtheria had developed. The odds were too high to include one of my patients, so I felt it couldn't happen to me, but it did.

Only today I saw a colleague's child with a positive throat culture and a typical diphtheria membrane over both tonsils. Why is it the doctor's children develop the unusual diseases or suffer from unusually severe symptoms? This child had been immunized against diphtheria with two doses of plain toxoid at 6 months of age. That was 3 years ago. Since then two negative Schick tests have

been read, the last one only 3 months ago. From the same batch of Schick testing material I have gotten positive reactions. The testing materials has always been kept on ice and always fresh. The immunization and tests were all read by this editor. The only explanation possible is that this child has lost her immunity during the past 3 months. She is moderately ill with her diphtheria. In addition, the contact must have been made with someone in the child's home as she had not been out of the house for 8 days. The carrier has not been discovered.

The most important question that arises is when to repeat the Schick test. Perhaps we will learn the answer to this question at the Meeting of the N. C. Medical Society in May, as I understand a paper on the subject of the Schick test is to be read before the Section on Pediatrics.

The editor of this column realizes that considerable space has been consumed with his ramblings during 1938. Hence, to try to compensate, this article is brief and concluded with Best Wishes for a Happy and Successful New Year to all of its readers.

THE PRESENT STATUS OF DIPHTHERIA IMMUNIZATION
(J. F. COPPOLINO, Philadelphia, in *Med. Times*, Dec.)

A single dose of alum-precipated toxoid produces prompt but temporary immunity. At least two doses, a total of 15 antigenic units, at an interval of two weeks must be used to produce prolonged immunity. This has been known to last two years.

A single dose of formaldehyde toxoid is totally inadequate. At least 2 doses, a total of 2 c.c., of commercial formaldehyde toxoid are necessary to produce immunity; 3 doses are better. It is said that immunity lasts 4 years.

Three doses of toxin-antitoxin appear to be inferior to either of the toxoids, but 4 doses will produce 92% immunity, but then only after 2 years.

The most favorable age for immunization appears to be between 6 and 9 mos. in children living in country districts, 9 to 12 mos. in those residing in the city.

Schick testing should be carried out preliminary to vaccination and every year thereafter for several years.

It is a general belief (*R. N. Chopra*, Calcutta, in *Indian Med. Rec.*, Oct) that sexual maturity is gained earlier in the tropics than in cooler climates. Recent researches however tend to indicate that the reverse is probably true.

HOSPITALS

R. B. DAVIS, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

THE SUPPLY AND DEMAND OF NURSING SERVICE

IN a world of turmoil and strife where labor is pitted against capital, brawn against brain, modernism against conservatism, depression against inflation, war against peace, the keynote of the situation has been entirely overlooked. The only way to pour oil on these troubled waters is to make supply meet demand of any service or commodity. The nursing service is no exception to this rule.

For some time there has been growing in the minds of some few leaders in the profession the idea that there is an oversupply of nurses. This same group, however, readily admit that automobiles are maiming more individuals today than they have at any time since the invention of the auto buggy. There is no disposition on their part to deny that the accident service of all hospitals is going up at a rapid rate. Nor will this same group deny statistics which report the birth rate in the United States. And, I believe they will agree that the rank and file of the citizens are more prone to call for special nursing service each year. The fact that hospitals are encreasing by the dozens in every state will bear out these facts. What can this mean except a demand for more nurses?

It is to be noted that sick people are scattered all over the country, many are in the strictly rural sections, others are in small communities, many in the larger cities. Rural and semirural people should have good nursing service; but where are we going to get the nurses?

Some will argue that the large hospitals, with their enormous endowments and expensive equipment, can train all the nurses that this country needs; but experience has taught that few nurses who graduate in the large cities migrate to the smaller places, and those few expect to receive a higher salary than the hospitals or the patients one considers the great expense upon a nurse who there are able to pay. This is only natural when one considers the great expense upon a nurse who trains in a large hospital. The larger hospitals charge tuition which is hard for the average pupil nurse to pay. Then, too, they require more preliminary education than is necessary to make a good nurse. In a large city clothing and incidental expenses are much greater than in a smaller place. One should therefore not condemn the nurse for asking good fees for her service, but on the other hand should encourage the lay public to pay the nurse a living compensation and some above when they are able to do so.

The demand for nursing service is great. Under present conditions, however, nurses have not quite recognized the great need among people with low incomes. This may be accounted for to some extent by the fact that a great number of wealthy people keep special nurses as a luxury after the first few days following an operation. During this time the nurse receives the same compensation as when she was nursing an ill patient, but she does not work nearly so hard. It is hoped that the

leaders in the profession will realize that ward patients and those in semiprivate rooms can become just as ill as those in more expensive rooms. It will not take a great deal of study for the nursing profession to realize that this demand for nursing among the poorer people is going to be met. It will be far better for the profession if it will remedy this deplorable condition itself.

The author suggests for thought a sliding scale of fees representing an amount equal to the price of the room or bed which one occupies in the hospital. For example, for a patient in the ward paying $3.00 per day, a rate of $3.00 per day and board for a period of five to 10 days. After this she would be eligible to be called upon to take a case which would pay more, should such a call come in. Then a second nurse who is off duty and not making anything could fill in until she received a call from a patient who would pay more.

This, in the author's judgment, would solve a great problem in the nursing profession—that of being off duty so much of the time. I firmly believe that the total income of the nursing profession of any State would be increased by a third if such a sliding scale of fees were adopted. Certainly it does seem that some change is going to take place, and this one would seem worth trying at least for a time.

In order to meet this situation a large number of training schools in former times put pupil nurses on with people who were unable to pay $5.00 or $6.00 a day and board for a special nurse. In this manner nursing service was furnished to a group of people, who, since this practice has been discontinued, have found it impossible to have special nurses no matter how ill they became.

It is my firm belief that the nursing profession can meet this demand in one way or another. I have faith enough in the profession to believe that is is always seeking to give service to the needy sick. It can only be an oversight on its part not to have remedied this situation long before, and when it does remedy it it is going to find the need of more training schools in the smaller hospitals to supply this demand. The moral burden is upon the profession and I feel that it is willing and anxious to take this responsibility and meet it with definite, alleviating action. The medical profession and the hospitals are ready and anxious to coöperate with the nursing profession in every way possible.

In a school examination the examiner put the question: "What is false doctrine?" Up went a little boy's hand and this was his answer: "Please, sir, it's when the doctor gives the wrong stuff to the people who are sick."

CLINICAL CHEMISTRY & MICROSCOPY

Clinical Pathological Conference

Wake Forest Medical School Mary Elizabeth Hospital

Robt. P. Morehead, M.D., Wake Forest, N. C., Presiding

Dr. Morehead: This case of pneumococcic meningitis is presented because it brings up the question of puncturing the ear-drum early or late. Dr. Harold Glascock, Jr. of Raleigh will give the clinical record.

Dr. Harold Glascock, Jr.: A 9-year-old white school-girl admitted to the hospital at noon March 13th. Her past and family history were negative. She had been well, except for occasional gastro-intestinal upsets, until three days before when she felt pain in her left ear. A physician advised that drops be put in the ear. The following day the ear drained a small amount of pus, then stopped draining. On the day before admission she had been seen by a pediatrician who did not find any indication for incising the drum. Nausea and vomiting present at that time were attributed to another gastrointestinal upset. On the morning of admission she became semistuporous. She was seen by a surgeon because of soreness in the abdomen which had developed during the night. No reason for surgery could be determined and no signs indicative of middle-ear infection were noted. The patient's condition growing steadily worse, her family physician advised that she be admitted to the hospital. Questioning of her mother revealed no significant additional facts.

The patient was a normally developed, undernourished, white school-girl appearing acutely ill. The positive findings were: Tenderness on pressure on the eyeballs, neck so rigid that the body could be raised by lifting the occiput, pain on pressure along the spine and on bending the spine in any direction, positive Kernig sign. These signs with the history gave the impression on admission of meningitis secondary to a middle-ear infection.

Spinal tap was done as soon as possible and the fluid found to be under moderately increased pressure. It was grossly cloudy in both tubes, contained innumerable pus cells and gram-negative diplococci in short chains. None of the bacteria was found within a cell. They were considered to be streptococci and sulfanilamide was begun at once.

(Results of laboratory studies were shown by lantern.)

March 14th.—No improvement noted. Sulfanilamide being given orally and intramuscularly. Spinal tap was done and 4.2 c.c. of 0.8% solution of crystalline sulfanilamide was introduced very slowly into the spinal canal. The spinal fluid

showed the same findings as on the day before. No signs of change for the better could be discovered.

March 15th.—The patient's condition became steadily worse. During the afternoon report was received on the spinal fluid culture that the organism reported [illegible] ter this as possible 10,000 units of specific serum was given in a vein and 20,000 units in the spinal canal. Following this her p. and t. seemed to be on the down slope, but at 11:00 p.m. the outlook was rather hopeless. Consultation with an ear, nose and throat specialist obtained the opinion then there was no indication for opening the drum of either ear. His belief was that the infection had reached the meninges by the nasal route. At midnight she suddenly stopped breathing. The p. dropped to within normal limits. Artificial respiration and oxygen therapy were of no avail and the patient was pronounced dead at 1:10 a. m.

In this case death was believed to have been due to the condition which we hear a lot about, but which is so difficult to demonstrate at autopsy, namely edema of the brain pressing the medulla so far down into the foramen magnum as to fatally compress the vital centers.

Final clinical diagnosis was pneumococcus meningitis secondary to a middle-ear infection.

Dr. Morehead: Dr. C. C. Carpenter performed the autopsy and will now give you his findings.

Dr. Carpenter: Autopsy done a few hours after death showed the cause of death to be acute purulent meningitis. Culture from the exudate showed the same organism as that found in the spinal fluid during life—type-1 pneumococcus. There was a purulent exudate in the middle ear. We may see on this slide (screen) a section of brain showing the meninges in which there is intermingled a thick purulent exudate, that dips down into the sulci along with the meninges. The only other finding of interest may be seen in a slide of the lung, distention of all the blood vessels and thickening of the alveolar walls. High magnification shows the capillaries in the alveolar walls greatly distended with blood and in several areas an exudation of polymorphonuclear neutrophiles. Therefore, there was probably a mild or beginning inflammatory process in the lungs.

This case brings to my mind two points that I would like to hear discussed. I understand from the family history that another child in this same family had, 10 days later, a purulent otitis media and the ear-drum was punctured with early drainage. This child made a complete and uneventful recovery. This brings up a question of early opening of an ear drum in otitis media, and the possible value of the use of antipneumonoccus serum in infections by that organism other than pneumonia, particularly when the organism is of the type-1 we had in this case.

I observe that we have present Dr. Frank R. Yarborough of Cary who, in his general practice, does a great deal of ear, nose and throat work with marked success. I would appreciate his discussing the question of opening ear drums. Dr. E. S. King, Professor of Bacteriology in our Medical School, is here and I am certain we would enjoy hearing him discuss the bacteriology of this case.

Dr. Yarborough: Probably a general practitioner should not give an opinion. I have had occasion during my 14 years of practice, however, to treat many such cases. In many consultations with pediatricians and otologists, I note that the ear specialist is more reluctant to cut ear drums than are pediatricians. Pediatricians puncture ear drums in cases of high fever along with acute colitis, especially if the drum is the least red.

The otologist waits for redness and some bulging of the drum. I have in mind a case in which a pediatrician incised the drum on the second day after the child developed fever, but the patient developed mastoiditis and died.

I follow the custom of my favorite otologist in waiting for redness and bulging before cutting.

Dr. King: Pneumococcic meningitis is a disease that strikes primarily, but most often is secondary to disease about the ears and accessory sinuses. About 70% of all cases of meningitis are due to one of the four types of meningococci, about 20% to pneumococci, 10% to other organisms—mainly Pfeiffer's bacilli, tubercle bacilli, streptococci, staphylococci and fungi.

As a precaution against intracranial complications from an infected middle ear or mastoid, good results have been recently reported from the use of an autogeneous vaccine. At the time of operation on these parts pus may be collected under sterile conditions and cultivated on the appropriate medium, and a vaccine prepared by suspending the organisms in normal salt solution and killing by heat. The organism frequently found under these conditions is pneumococcus type-III. By the injection of this vaccine subcutaneously or intracutaneously many intracranial complications have been prevented.

With regard to serum therapy of pneumococcic meningitis, the use of concentrated anti-pneumococcic horse serum intraspinally of the types that lend themselves to serum treatment has not produced startling results. The prognosis is much worse in cases of heavy meningeal infection, graver still if there is a bacteremia. Something of the

patients fighting power may be revealed by determining the bactericidal power and the aggultinating titer of the serum. If these are found low or lacking this would be an even greater indication for the intravenous use of antipneumococcic serum. Good results have been reported from injecting 5 to 10 c.c. of the patient's own serum intraspinally and especially is this true if the serum has a high antibody content. The patient's serum may be injected with, or independently of, antipneumococcus horse serum. Frequently great improvement and recovery follows the intraspinal injection of antipneumococcic horse serum plus 5 to 10 c.c. of normal human serum. The use of heavy doses of sulfanilamide combined with serum treatment has been claimed by some to give better results, but this has not been true in the hands of all.

PUBLIC HEALTH

N. Thomas Ennett, M.D., Health Officer, Greenville, N. C.
Editor

Amen

From the *Journal of the American Medical Association* of December 17th we quote from an article, The Private Physician's Role in The New York City Syphilis Control Activities, by Drs. Charles Walter Clark and Theodore Rosenthal, of the New York City Dept. of Health.

"Not merely in words but also in action the New York City Department of Health has expressed its belief that the role of the private physician in the control of syphilis and gonorrhea is of paramount importance."

"The health Department should study seriously and frequently the question: What can we do to help private physicians find, treat and keep under treatment more and more persons with gonorrhea and syphilis, especially those who can pay a fee, even though a very modest one? No health department can afford to neglect measures for obtaining the coöperation of private physicians. If the coöperation of the official agency is sincere—with emphasis on the "co"—and not merely a one-sided demand, for reports and red tape performances from private physicians, the results will be satisfactory to all concerned."

Drs. Clarke and Rosenthal's point of view appears to us so sound and so in keeping with our own point of view that we wish it were possible to broadcast this statement to every health officer in North Carolina, and throughout the nation as well.

We would add that not only in the control of syphilis and gonorrhea is the role of the private physician of paramount importance; this is true also of diphtheria, scarlet fever, tuberculosis, pellagra, and all other contagious and non-contagious diseases.

It is our fixed opinion that wherever the private physician is out of sympathy with the Public Health Program it is more apt to be the fault of the health officer than of the private physician.

Letter from the Auxiliary to the Medical Society of the State of North Carolina

Our organization has grown so rapidly and the membership has varied so greatly in the sixteen years of its existence that many of us are ignorant of our beginnings, so it seems wise in this first letter to give a little of our history—of those foundations upon which we have built.

The Seventieth Annual Session of the Medical Society of the State of North Carolina was held in Asheville in 1923 with Dr. John Wesley Long, presiding. In his President's Address, Dr. Long announced the birth of an Auxiliary on Sunday, March 17th, 1923, at Sanatorium. He said, "The Auxiliary was sponsored by Mrs. P. P. McCain, who is her godmother. This insures her proper raising and education. The little lady promises well, and says as soon as she gets out of her swaddling clothes she will take a lively interest in the Medical Society as a whole and every doctor in it as an individual. She proposes to gather together all the doctors' wives and daughters in the State and attend the annual meetings with them. She promises to dance with the boys and jolly the old men. She says she will look after any doctor or his family when they get sick or in trouble... Furthermore, she says that the only thing she asks in return for her activities in our behalf is for the Society to acknowledge her paternity and give her its approval by resolution in the House of Delegates." On April 18th, 1923, the Auxiliary was formally organized at Kenilworth Inn with Mrs. P. P. McCain, of Sanatorium, acting as Organization Chairman. Mrs. S. C. Red, of Houston, Texas, President of the Auxiliary to the American Medical Association, was present for the organization and gave a brief history of the Auxiliary. Dr. J. W. Long, President, and Dr. L. B. McBrayer, Secretary-Treasurer of the State Medical Society, attended the organization meeting. Mrs. McCain was elected President and Mrs. J. W. Faison, of Charlotte, President-Elect. There were fifty-three doctors' wives present at the organization meeting. In the Constitution is stated—

"The object of this Auxiliary shall be to promote unity, harmony and concord between the members of the medical profession and between the

families of such members; to assist in the social activities at state, district and county society meetings; to interpret to the public the traditions, aims and objects of the medical profession; to fraternize with women's organizations of whatsoever kind, and to promote in every possible way the interests in general of the medical profession—locally, and in the State and Nation."

In our next letter we shall tell something of our projects, and especially of how well we have kept our promise to "look after any doctor or his family when they get sick or in trouble."

We wish to thank Dr. Northington for giving us a place in *Southern Medicine & Surgery* for a monthly letter. We shall try to make them brief, informative and pertinent.

Mrs. J. Buren Sidbury,
Publicity Chairman,
Wilmington, N. C.

Country Obstetrics

(W. J. Shaw, Fayette, in *Jl. Mo. State Med. Asso.*, Nov.)

Six hundred home confinements over a period of 10 years. All uncomplicated cases are seen the third postpartum day, at which time the breasts and perineum are examined, lochia inspected and t. noted. Patients in whom a laceration has been repaired or who are otherwise exceptional are seen as often as necessary.

There have been no cases of puerperal sepsis. A complete examination is made of each patient at the time she presents herself for obstetrical service—examination of the chest, abdomen, breasts, reproductive and urinary organs and complete blood studies when indicated with especial attention being paid the erythrocyte and hemoglobin values, tests for syphilis; pelvimetry; return every three weeks, weight, b.p. and urinalysis. At the end of the seventh month of pregnancy the position and presentation of the fetus are determined and recorded.

Record of each patient is kept on a simple card. At each prenatal visit a notation is made. After the delivery, salient points in the labor and delivery are noted on the back of the same card, or a separate record made; 65% reported for prenatal care.

The setup of the home delivery room has entailed the labor of carrying a large obstetrical bag and a "pack" to each delivery. The bag is made up of two compartments: the upper containing instruments, solutions, anesthesia equipment and rubber sheet; the lower accommodates sterile goods, extra dressings and gloves, sutures, pads, scrub kit, nitrate of silver and necessary ampoules. The pack is prepared for use in a single delivery and contains only sterile materials such as towels, pads, leggings, sheets, placenta basin, medicine glass, cap and gown and dressings. Several of these packs are kept sterilized and two obstetrical bags are kept packed and ready at all times. A graduate nurse is taken to all home confinements. Upon arrival, if the patient is in labor, she is shaved and given a surgical preparation. When delivery is imminent, the patient is placed crosswise in bed with the hips brought to the edge (a board under the mattress). Under strict surgical asepsis the delivery is completed, the nurse administering the anesthetic. Lacerations are repaired immediately.

When the home delivery has to be conducted without usual equipment, sterile dressings may be provided by boiling cloths or towels on the kitchen stove or baking them in the oven. Razors may be found in the poorest of homes, boiling water can always be made available, and antiseptic solutions are carried in the bag of every doctor.

The patient is instructed in the care of the baby and how to assume the knee-chest position beginning the day she gets out of bed and to be repeated twice daily until the baby is 8 weeks old at which time the mother is given a careful pelvic examination.

If the uterus 8 weeks following delivery is not completely involuted and in the anterior position the patient is instructed to return every week until examination shows her to be normal.

Primiparae	241	40%
Multiparae	359	60%
Single births	596	99.3%
Twins	3	
Triplets	1	

68% were delivered spontaneously. More of these, if given sufficient time, would have delivered without assistance.

Operations: Outlet forceps, 12.8%; low forceps, 5.83%; medium forceps, 1.00%; high forceps, 0.33%; version and extraction, 7.83%; breech extraction, 3.66%; craniotomy, 0.16%; cesarean sections, 0.00%.

The gross maternal mortality was 3—one abruptio placentae, in a patient living 8 miles in the country during a rainy siege of weather; 1 case of uremia associated with a premature birth; and 1 case of pulmonary embolus occurring on the 10th post-partum day.

Stillbirths: face presentation, 1; macerated fetus and monsters, 5; maternal abruptio placentae, 1; maternal eclampsia, 5; prolapsed cord (spontaneous), 3; prematurity, 12; trauma incident to delivery, 7—34.

Neonatal deaths: breech delivery—cerebral hemorrhage, 1; prematurity, 3; cerebral hemorrhage, 3—7.

The three premature babies who died after delivery (spontaneous) all in the 7th month and lived 1, 2 and 4 days after delivery. Possibly better care might have saved these babies, but generally premature babies may be as well attended in a cardboard or wooden box, warmed by blankets or hot water bottles, as in the better equipped hospitals. Although considerable time and patience is demanded, any baby over 4 lbs. and past the 7th month, if intelligently fed and handled, should survive.

If the judicious use of sedatives to prevent exhaustion is not forgotten, if the fluid and food intake are maintained, and the p. can be kept under 100 per minute, the country woman will deliver without interference as well as her city sister.

When necessary, operative obstetrics in the country can be fully as successful as in the city.

A comparison of these 600 cases of so-called country or home obstetrics shows little difference from those reported from large centers.

It is believed that carefully compiled records by those designated as country doctors, some of whom have personally attended as many as 7000 parturients, would be of material benefit. Progress may be made in lowering maternal and fetal mortality when a careful study of this nature is made and such remedial action as may be deemed necessary is initiated.

Dr. Long Named to Board. Governor Hoey has appointed Dr. T. W. M. Long, of Roanoke Rapids, to the board of trustees of the State Sanatorium to succeed U. L. Spence of Carthage, resigned.

HISTORIC MEDICINE

AMERICAN DOCTORS IN OTHER FIELDS

BY

THURMAN KITCHIN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

(Appearing From Month to Month in this Journal. To Appear in Book Form)
(Copyright Applied For)

THOMAS HOLLEY CHIVERS
(1809-1858)

Doctor Chivers, the ante-bellum lyric poet of the South, was born in Wilkes County, Georgia, October 18th, 1809. He received the M.D. degree from Transylvania University (now University of Kentucky) in 1830, writing on Intermittent and Remittent Fevers for his graduation thesis.

He was wealthy and never practiced medicine as a means of livelihood, but throughout his life he practiced free of charge for those unable to pay a doctor. His chief interest was literature. His writings make up seven or eight large volumes.

There was a strong similiarity between the style of writing of Chivers and that of Edgar Allan Poe. Not only were these two in continuous controversy over priority in style, but it was taken up by the friends of each, and the charges and countercharges grew violent. Chivers accused Poe of stealing the rhythm which he invented.

There is no doubt that Chivers was eccentric, emotional, and at times so depressed as to border on melancholia. He was deeply religious. Most of his poems refer in one way or another to death.

While a student he wrote the poem The Path of Sorrow which recounts his wrongs and sorrows. Witnessing the death of a younger sister greatly disturbed him and the lines he wrote on the tragedy are depressing:

Oh! I shall never forget that eye
That dying eye! which closed upon her sight,
yea
Closed communion with the world! I heard her
Bid her mother come and see her last, Oh!
Wisdom of eternity! exalt my
Thought to tell of grief and woe—expand my
Soul to realize the dying thrill. Great
God! is this benevolence in Nature's
Laws! God of truth! upon her cheek I saw
The shadow of an inward strife, and, on
Her breast, I saw caparisoned, both life
And death,—the struggle was to marry death
To immortality ...
. . . . . .
. . . . . upon the icy
Breast of love, I saw the rose and lily
Stand at intervals, then fade away, like
Candles glimmering in the midnight glory
Of a morn that has no eve beyond it!

Georgia Waters is one of his few cheerful poems.

The Raising of Tabitha was written soon after his graduation in medicine and his medical knowledge is manifested in the description of the restoration of the girl to life by Christ.

The Soaring Swan is good, but he puts his mark on it by sending the bird to heaven. Here are some lines from this poem:

While in the welkin of the skies, the clouds,
Like undulating isles spread out upon
The ocean of eternity, appear
In lawny prospect, like the sweets of some
Ambrosial grove whose incense waves to heaven.
And far away they gather into floods
Of glory like the waves of sound that came
From ocean, when the wings of angels flew
To Salem with the music of the Lord.

Lily Adair, his best poem, resembles Poe's writing more than any other of his works.

From her Paradise-Isles of the ocean,
To the beautiful City of On,
The mellifluent rivers of Goshen,
My beautiful Lily is gone!
In her chariot of fire translated,
Like Elijah she passed through the air,
To the City of God golden-gated—
To the home of my Lily Adair—
Of my Star-crowned Lily Adair
Of my God-loved Lily Adair—
Of my beautiful, dutiful Lily Adair.

He had the misfortune to lose four of his daughters from typhoid fever in a short period of time and Avalon was written lamenting their death. Allegra Florence in Heaven, so called from the name of his oldest daughter, was written to his children.

The Lost Pleiad is one of his better poems:

The spirit's soul-delighting face
Was smothered in the soft embrace
Of Angels, when they, from the skies,
Leant down with their sweet melodies,
In rapturous joy, to hail thee theirs,
And by the keen light of the stars
Behold thee, like a snow-white Dove
Ascending through the heavens above
And caught thee, frantic with delight,
And bore thee singing out of sight. . .

From 1856 his home was at Decatur, Georgia, where he died December 19th, 1858. Unfortunately his home was on the line of Sherman's devastating March to the Sea, and although Chivers' had been dead six years, his library was destroyed and all his manuscripts were damaged.

He was a classical scholar, including in the scope of his scholarship an intimate acquaintance with the Hebrew language and its literature, and he had skill as a portrait painter. Even as an inventor he achieved success, being awarded a valuable prize at one of the Fairs of his State for his invention of a machine for unwinding the fiber of silk cocoons.

RICHARD JORDAN GATLING
(1818-1903)

Doctor Gatling was born in Hertford County, North Carolina, September 12th, 1818. He received his medical training in the Medical College of Ohio at Cincinnati. It is said that he had an attack of smallpox and was unable to get medical attention and upon his recovery he decided to study medicine in order to care for himself and his family.

His father was a large planter and young Gatling became greatly interested in improving agricultural implements. He invented and patented a rice-sowing machine in 1839 and then a wheat drill operating on the same principle. In 1847 he patented a hemp-breaking machine and in 1857 he invented a steam plow.

Then the atmosphere of war turned his attention to the tools of Mars, and in September 1862 he patented a marine steam ram and, on November 4th, 1862, a rapid-fire piece of ordnance that became known as The Gatling Gun, and made him famous throughout the world. He is remembered chiefly by the gun which carries his name. He made improvements on this gun and in 1865 he was issued a second patent. In 1866 the gun was officially adopted for the United States Army.

In his old age he turned again to farm machinery and in 1901 invented a motor-driven plow, but before the manufacture of these plows was begun he died of influenza February 26th, 1903.

THOMAS DUNN ENGLISH
(1819-1902)

Doctor English was born in Philadelphia, June 19th, 1819. He received the M.D. degree from the University of Pennsylvania in 1839. However he later studied law and was admitted to the bar in 1842. From 1844 to 1859 he was an editorial writer. In the latter year he moved to Fort Lee, New Jersey, and again began practicing medicine.

His best known work is the ballad Ben Bolt. It is said that his long poem Kallimais was written in a single day and published without revision. His best play, The Mormons, or Life in Salt Lake City, is said to have been written in three days and nights. Another poem, The Long Glazier, was composed in a few hours. The Gallowsgoers was an argument against capital punishment.

Many of his plays and novels which were successes for a time are rarely heard of today. These include Walter Woolfe, Ambrose Fecit and Jacob Schuyler's Millions.

His first book was a volume of poems which was published in 1855. He wrote many stories for boys. The poems which were most popular were those published in the volume entitled, The Boys' Book of Battle Lyrics.

He was one of those who felt that the country needed a more representative national hymn, and he wrote and submitted two poems for the purpose of replacing The Star Spangled Banner.

A story is told of a fist fight between Dr. English and Edgar Allan Poe in the streets of New York. English knocked Poe down and mauled him considerably. Poe then wrote a severe article concerning English in his series, "The Literati of New York." English replied hotly in the *New Mirror* and Poe sued this paper and got a verdict for $225.00 damages.

He was also active in politics. He served in the State Legislature of New Jersey and also represented a district of that state in the United States Congress for two terms. He died at Newark, April 1st, 1902.

FRANCIS ORRAY TICKNOR
(1822-1874)

Doctor Ticknor, physician and poet, was born at Fortville, Georgia, November 13th, 1822. He received the M.D. degree from the Philadelphia College of Medicine in 1843 and began practice in Muscogee County, Georgia. About 1850 he moved to Torch Hill, seven miles south of Columbus, where he actively practiced his profession until his death, December 18th, 1874.

In addition to attending to a large practice, he took an active interest in the cultivation and improvement of fruits and flowers, in music, drafting and writing poetry. His poetry is so good that it is a pity he did not give more time to writing. While he lived his writings attracted only local attention, and it was five years after his death before a part of his work was collected and published in one volume.

His best poem, Little Giffen, was based on an actual incident which he observed while he was supervisor of the Confederate Hospital in Columbus—

LITTLE GIFFEN

Out of the focal and foremost fire,
Out of the hospital walls as dire;
Smitten of grape-shot and gangrene,
(Eighteenth battle, and *he* sixteen!)
Spectre! such as you seldom see,
Little Giffen, of Tennessee!

"Take him and welcome!" the surgeon said;
Little the doctor can help the dead!
So we took him; and brought him where
The balm was sweet in the summer air;
And we laid him down on a wholesome bed—
Utter Lazarus, heel to head!

And we watched the war with bated breath—
Skeleton boy against skeleton death.
Months of torture, how many such?
Weary weeks of the stick and crutch;
And still a glint of the steel-blue eye
Told of a spirit that *wouldn't* die.

And didn't Nay more! in death's despite
The crippled skeleton learned to write.
Dear Mother, at first, of course; and then
Dear Captain, inquiring about the men.
Captain's answer; of eighty-five.
Giffen and I are left alive.

Word of gloom from the war, one day;
Johnston pressed at the front, they say.
Little Giffen was up and away;
A tear—his first—as he bade good-by.
Dimmed the glint of his steel-blue eye.
"I'll write, if spared!" There was news of the fight
But none of Giffen.—He did not write.

I sometimes fancy that, were I king
Of the princely Knights of the Golden Ring,
With the song of the minstrel in mine ear,
And the tender legend that trembles here,
I'd give the best on his bended knee,
The whitest soul of my chivalry,
For Little Giffen, of Tennessee.

Of the great number of his poems, the ones given here are quoted from *The Library of Southern Literature,* Volume 12. These were edited by C. Alphonso Smith.

ORA PACE

Ora Pace! Ye that lift
The nation's weapons, keen and swift,
Ere ye loose the thunder, pray
That the wrath may pass away!
Ere the lightnings ye release,
Patient statesmen, pray for peace!

Ora Pace! Ye that stand
The shield and summer of the land;
Though the blood is hot and high,
Bounding for the battle-cry,
Remember, boys, whose kiss ye bear,
And pray for peace, ye sons of prayer!

THE VIRGINIANS OF THE VALLEY

The knightliest of the knightly race
That, since the days of old,
Have kept the lamp of chivalry
Alight in hearts of gold;
The kingliest of the kingly band
That, rarely hating ease,
Yet rode with Spottswood round the land,
And Raleigh round the seas:

Who climbed the blue Virginia hills
Against embattled foes,
And planted them in valleys fair,
The lily and the rose;
Whose fragrance lives in many lands,
Whose beauty stars the earth,
And lights the hearths of happy homes
With lovliness and worth.

We thought they slept!—the sons who kept
The names of noble sires,
And slumbered while the darkness crept
Around their vigil-fires;
But, aye, the Golden Horseshoe knights
Their old Dominion keep,
Whose foes have found enchanted ground,
But not a knight asleep!

GEORGIA

Between her rivers and beside the sea,
My mother-land! What fairer land can be?
The lyric rapture in her leaping rills,
The crown imperial on her purple hills.
Her lips are pure that never breathed a curse;
Her hands are white before the universe.
Behold the witness of the King of Peace
Clear, in the splendor of her dew-lit fleece.
And lo! the midnight of her shrouded mine
Garners the radiance of the years to shine.
Yea! the swart Gnome that bides his time below
Shall rise at last, in full regalia glow!
And the great Alchemist shall teach the Sun
That Earth's great gloom and Life's great light are one!
Oh, sweetest souls that ever rose by prayer
White from the furnace-dungeon of despair!
That wrought new grace from battle's chaos-mould,
And reared new shrines from ashes not yet cold.
Not cold!—from flames the strangest that have given
From all this world, an altar-smoke to Heaven!
Crowned on the cross, above high-fetter line,
They smile on hate with Love's own smile divine.
Prouder than hills that plume thy star-ward crest,
Sweeter than dales that dimple at thy breast.
Richer than Rome! when God's great chariot rolls,
Imperial Georgia! count thy children's souls.

It is said that the epitaph which he wrote for the title character of his humorous poem, The Farmer Man, describes his own character—"He read the Bible, loved his wife, ...loved God, his neighbor and his home."

EDWARD HAZEN PARKER

(1823-1896)

Doctor Parker was born in Boston in 1823, and received the M.D. degree from Jefferson Medical College in 1848. He became Lecturer on Physiology and Anatomy at Bowdoin Medical College and edited the *New Hampshire Medical Journal*. In 1853 he moved to New York as Professor of Physiology and Pathology in The New York Medical College. He attained eminence as a physician and in 1858 removed to Poughkeepsie, where he practiced medicine until his death.

He did not write extensively outside the subjects pertaining to medicine and his contributions to literature consist of four verses. The first verse, with many changes and modifications, is found on tombstones all over the country. For a

long time the authorship was not known but in time it was settled on Dr. Parker. The original verses, according to an editorial in the *New York Medical Journal* of December 7th, 1921, are as follows—

Life's race well run.
Life's work well done.
Life's victory won.
Now cometh rest.

Sorrows are o'er.
Trials no more,
Ship reaches shore;
Now cometh rest.

Faith yields to sight,
Day follows night,
Jesus give light;
Now cometh rest.

We awhile wait,
But, soon or late,
Death opes the gate;
Then cometh rest.

ALFRED MERCIER
(1816-1894)

Doctor Mercier was born at McDonough, Louisiana, in 1816. At the age of fourteen he was sent to France for his education. At first his purpose was to become a lawyer, but he gave this up, became interested in literature and published two volumes of poems in Paris in 1842; then decided to give up writing and devote himself seriously to the study of medicine. He received the M.D. degree in 1855 and immediately returned to the United States and began practice in Louisiana. In 1859 he journeyed again to France and returned to New Orleans after the War Between the States and practiced in that city the remainder of his life.

While he was prominent as a physician and did much writing along medical lines, his chief distinction is in the field of literature. The volume of his writings, consisting of novels, short stories, narratives and poetry, is enormous. The few brief sketches of his more important works which follow are taken from *French Literature of Louisiana* by Ruby Van Allen Caulfield.

Two volumes of poetry he published before he began the study of medicine—*La Rose de Smyrne* and *L'Ermite de Niagara*. La Rose de Smyrne gives a picture of oriental life emphasizing the unhappy condition of its women: "Hatilda, sold by her father to old Aroun, laments her fate in touching words. A young Greek comes, they meet, and love each other. Their love is discovered by Aroun and the Greek is killed. The faithless wife is dragged before the judge and condemned to be stoned.

The other poem, L'Ermite de Niagara, tells the old story of a wounded paleface who comes to an Indian hut, sees an Indian girl, loves her, and is killed by the jealous Indian lover. It is really a drama in verse in five acts. The third act is, to a certain extent, a degression from the story. The young lover, Elfrida, has jumped into the falls of Niagara. The remainder of the act gives his experiences under the falls. The nymphs are singing in chorus the praises of Niagara. When the Genius of the Falls tried to make Elfrida promise obedience, the Father of Waters intercedes in his behalf and he is allowed to go. He is met by the goddess of vengeance and hatred who tells him that his race is pursued because of its actions toward the Indians. As Dr. Mercier's talent for narration is greater than his skill in verse, he is more successful in writing narratives in prose than in poetic form.

In 1873, his first novel, Fou de Palerme was given to the public. It portrays gypsies, poisoned daggers and masked balls. A young man, Angiolo, is seen wandering in the garden of the Duke di Falco. Angiolo has been studying music in Paris and after he returns home a band of gypsies come to his city. They are not welcome and apparently leave, but instead hide in the tombs. At a masked ball, one of the gypsy girls appears and there is much discussion as to her identity. Angiolo falls in love with her. When she tries to slip away from the ball before the time for unmasking arrives he follows her home. A jealous gypsy boy kills her. Then Angiolo, through the intensity of his passion and the bitterness of his grief, loses his mind and spends his time wandering around the duke's garden.

Dr. Mercier is credited with founding the *Athénée Louisianais* in 1876.

La fille du prêtre is a *roman à thèse* attacking the celibacy of the priests and includes a great deal of European history.

In 1887 he wrote Lydia in which the reader is conducted to Paris and Sicily. This was first published anonymously. It shows how the love of music brought two young people together and awakened love in their hearts. He pictures the contentment which the peasants of France and Sicily find in their work.

In 1891 he published, Johnelle, a novel which attacked infanticide.

Emile des Ormiers is a short story depicting the grief and ultimate suicide of a young painter in Paris.

In his earlier days in Paris, Dr. Mercier wrote the novel Hénoch Jédésias. This was in 1848, but the manuscript was lost when the offices of the *Réforme* was pillaged. However, in 1892-1893, he rewrote the book from memory and it was published in the *Comptes Rendus de l'Athénée Louisianais*. This is a hideous story of a young man who so loves money that he slays his wife, robs his father's tomb, kills his friends and confines his life to lending money at a high rate of interest. Thieves finally enter his home, torture him, take his money, and leave him to die.

As poet, novelist and philosopher, this physician did as much, if not more, than any other man to give a Creole literature to Louisiana.

Dr. Mercier died in New Orleans in 1894.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior
JAMES K. HALL, M.D. . . . . Richmond, Va

Eye, Ear, Nose and Throat
EYE, EAR AND THROAT HOSPITAL GROUP Charlotte, N. C.

Orthopedic Surgery
O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. } Charlotte, N. C.

Urology
HAMILTON W. MCKAY, M.D.
ROBERT W. MCKAY, M.D. } Charlotte, N. C.

Internal Medicine
P. H. RINGER, M.D. Asheville, N. C.

Surgery
GEO. H. BUNCH, M.D. . . . Columbia, S. C.

Obstetrics
HENRY J. LANGSTON, M.D. Danville, Va.
IVAN M. PROCTER, M.D. Raleigh, N. C.

Gynecology
CHAS. R. ROBINS, M.D. Richmond, Va

Pediatrics
G. W. KUTSCHER, JR., M.D. Asheville, N. C.

General Practice
WINGATE M. JOHNSON, M.D. Winston-Salem, N. C.

Clinical Chemistry and Microscopy
C. C. CARPENTER, M.D. . . . . Wake Forest, N. C.
R. P. MOREHEAD, B.S., M.A., M.D., Wake Forest, N. C.

Hospitals
R. B. DAVIS, M.D. Greensboro, N. C.

Cardiology
CLYDE M. GILMORE, A.B., M.D. . . . . Greensboro, N. C.

Public Health
N. THOS. ENNETT, M.D. Greenville, N. C.

Radiology
ALLEN BARKER, M.D.
WRIGHT CLARKSON, M.D. } Petersburg, Va.

Therapeutics
J. F. NASH, M.D. Saint Pauls, N. C.

Tuberculosis
P. P. MCCAIN, M.D. Sanatorium, N. C.

Offerings for the pages of this journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

This journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

PREPARATIONS FOR THE TRI-STATE MEETING

THE program for the meeting of the Tri-State Medical Association of the Carolinas and Virginia to be held at Charleston February the 20th and 21st is just about complete, and a gratifying outlook it affords.

Dr. John deJ. Pemberton of the Mayo Clinic will deliver an address and hold a clinic in surgery.

A group of our Charleston members are counted on for clinics in neurology and in general medicine.

Formal essays are promised as follows:

Dr. T. Neill Barnett, Richmond—Automatic Drip in Peptic Ulcer
O. D. Baxter, Charlotte—Points in X-ray Diagnosis
A. G. Brenizer, Charlotte—Hemolytic Jaundice
M. O. Burke, Richmond—Recollections of a Country Doctor
F. T. Coleman, Columbia—Thoracic Surgery
R. S. Crispell, Duke — Neuropsychiatry in Medical Education and Practice
J. H. Dougherty, Asheville—Water Balance
John Donnelly, Charlotte—Tuberculosis Fads, Fallacies and Facts
J. M. Feder, Anderson—New Technic for Typing Pneumococci
C. M. Gilmore, Greensboro—Liver Extracts in Uremic Coma
Harold Glascock, Jr.,Raleigh—Treating Pneumonia in the Home
F. S. Johns, Richmond—Gallbladder Cases
J. M. Hutcheson, Richmond—Cardiac Complications of Funnel Breast
D. B. Koonce, Wilmington—Brain Injury in General Surgery
W. H. Kelley, Charleston — Sulfanilamide Pyridine in Lobar Pneumonia
F. E. Kredel, Charleston—Stored Blood for Transfusion
J. G. Lyerly, Jacksonville(formerly of Richmond)—Brain Lesions Causing Epilepsy
Paul McBee, Bakersville—Strangulated Hernia in the Old
R. M. Miller, Gastonia — Pneumonia Treatment by the General Practitioner
R. P. Moorehead, Wake Forest—"Chronic" Appendicitis
Wilson Pendleton, Asheville — The Allergic Patient
J. A. Pilcher, Jr., Roanoke—Recent Observations on Eye, Ear and Throat Practice in Europe
W. H. Prioleau, Charleston—Thyroidectomy Results

I. M. Procter and Kenneth Dickinson, Raleigh —Occiput-Posteriors

J. T. Saunders, Asheville—Common Foot Disorders.

D. T. Smith, Duke—Nicotinic Acid in Pellagra

J. T. Wolfe, Washington—Adrenalin as an Antispasmodic

The whole field of medicine and surgery is covered—literally from brain injuries to flat feet.

Such old stand-bys as pneumonia, occiput-posterior and hernia will share attention with allergy, water balance and nicotinic acid. An ex-country doctor will draw the long bow in reminiscing about his experiences in that character. The use of the Röntgen rays for diagnosing paralyses, the cause and cure of jaundice, liver extract for uremia, usefulness of the newest preparation of the new and astonishing sulfanilamide, what European eye and ear doctors are doing, the mutations of allergy, funnel breast, fits: Is there a doctor anywhere who can say there's nothing on the program of interest to him?

Research and other specialists from the medical centers, surgeons from small hospitals in remote villages and general practitioners from all about will gather to hear and be heard, to discuss their problems, to exchange information. Good old ways and good new ways will be extolled. Old and new things found wanting will be condemned. All of us, meeting in one hall, will study and be taught how disease affects the whole man and what to do for the whole man.

Detailed programs will be mailed well in advance of the meeting.

President Highsmith is not in robust health; but he is resting and we trust he will be able to present his address and guide the deliberations of the association.

Let every member make up his mind now to attend and bring his neighbor with him.

A Definite Plan as to Tuberculosis

Through the operation of many causes tuberculosis has come to be thought of as a disease to be handled by the specialist, the general practitioner's only concern with it being to suspect it, and, possibly to have a sputum examination made. Whether or not the bacilli be found the general idea seems to be that the patient is to be sent to a tuberculosis specialist—for diagnosis if no bacilli, for treatment if the diagnosis has been established by the finding of the little red rods. And this applies to patients of all ages. All this and more, one of the best internists in the State told me, when I expressed the opinion that doctors generally would be interested in a discussion of the management of tuberculosis.

However it may have come about, when the diagnosis of tuberculosis of the lungs is made, family doctor and family generally take the attitude that the patient must be got into a sanatorium, and that there's nothing to be done in the meantime. I have had heads of families above the average of intelligence and education say as much to me, when I directed that certain things be done for a patient at home.

All of us who cared to think about the matter have realized all along that, however desirable it might be to have every tuberculosis patient in a hospital, this could not be, for the simple reason that there are not beds enough—not a tenth or a twentieth enough.

Now comes a man second to none in his knowledge of the disease, and of practical means of dealing with the problem which the disease constitutes, and says a large proportion of those having the disease will get on just as well at school or about other usual avocations as they would in a hospital bed; and, moreover, that children with positive tuberculin reactions need not have x-ray examination until they become adolescents. This points the way to a definite, large-scale program; that of tuberculin testing all children, labeling those giving a positive reaction for x-ray examination at the proper time, and immediately hunting out the cases from which these children have got their bacilli.

With this issue Dr. P. P. McCain inaugurates a Department of Tuberculosis in this journal. His first editorial deals with problems brought to attention by Dr. Myers paper, and he points out ways in which the State's anti-tuberculosis agencies are coöperating, and stand ready to coöperate more, with the doctors in private practice.

By all means let us have more beds for the tuberculous; but let us open our eyes to the fact that most of the tuberculous must get their treatment (or their neglect) at home; and let us accept the idea that pretty good treatment can be provided at home.

The family doctors must have roles in this program of more importance than that of suspecter and referrer. Here is a plain way for the family doctors of the State to take charge of the diagnosis—with help in certain cases over prolonged periods, but always with the family doctor as physician-in-charge.

By finding the early infections in all our children by the tuberculin test, ferreting out the sources of infection and placing these individuals under proper care, then taking up the care of the children at

adolescence, the incidence of tuberculosis will be so reduced that we may look forward in North Carolina to what has come to pass in at least one of our States—beds in State Tuberculosis Sanatoria going a-begging.

DOCTOR WALTER CLARK ASHWORTH

Dr. Walter Clark Ashworth, 70, for many years one of the leading physicians in North Carolina and a prominent citizen of Greensboro since 1908, died December 16th, at Wesley Long Hospital. He had been confined to bed since late in November and for some days his condition had been critical.

Dr. Ashworth was born September 7th, 1868, in Randolph County, the son of William R. and Perlina Brookshire Ashworth. He received his medical education at the Ohio Medical College, Cincinnati, and the College of Physicians and Surgeons in Baltimore, subsequently taking postgraduate courses at the New York Polyclinic. In later years, he studied in Berlin and Vienna.

Membership was held by Dr. Ashworth in his county and State medical societies, the Tri-State Medical Association, the Southern Medical Association and the American Medical Association. He had served as president of the Eighth District Medical Society and of the Guilford County Medical Society.

For fourteen years Dr. Ashworth engaged in the general practice of medicine in Kernersville, from which town he moved to Greensboro in 1908. Shortly after locating here he established Glenwood Park Sanitarium and he was owner and manager of that institution up to the time of his death. He had been repeatedly honored because of his attainments in his chosen profession.

In 1894 Dr. Ashworth married Miss Birdie Sapp of Kernersville, who survives. Two daughters, Mrs. Andrew Joyner, Jr., of Greensboro, and Mrs. Frank B. Morris, of Winston-Salem; and three granddaughters, Misses Lena Winston, Mary and Sarah Morris, of Winston-Salem, are living.

Throughout his residence in Greensboro, Dr. Ashworth made his home at 116 South Spring Street. He exercised a lively interest in public affairs in his city, State and Nation, and steadfastly adhered to his convictions as to what he conceived to be right. He was known as a man of unusually strong character. During his early days as a physician, he used a horse and buggy in making calls, over a wide area, and old-timers happily recall his effective ministrations, giving without stint and without thought of the hardships which they often entailed in adverse weather, given also with a disregard of hours. He contributed mightily to the alleviation of suffering and the restoration of health in countless cases.

Quoting from an editorial in the Greensboro *Daily News* on December 17th: "Of this good physician, this useful citizen, it may rightly be said that he was true to the best traditions of the noble profession of which he was a leading member. No higher tribute than that could be paid to his memory.

—C. M. GILMORE.

DR. PRICE TIMMERMANN

Dr. W. P. Timmermann, of Gatesburg, S. C., died December 24th, following a cholecystectomy. Dr. Timmermann was graduated in 1891 and had been in active practice since that time. Through all these years he retained his youthful avidity for knowledge and ability to assimilate it, which kept him well up with the medicine of the day. He was an enthusiast for medical organization and every other kind of coöperation that was for the general good. Every doctor who has attended the meetings of the Tri-State Medical Association will miss his helpful discussions and his stimulating private conversation.

MASKED INTERMITTENT MALARIA

(D. W. Gillies Shaemer in *J. Okla. State Med. Asso.*, Dec.)

Among the symptoms of malarial cachexia are: fever wholly irregular, skin often yellowish-brown, spleen may or may not be enlarged, anemia, debility, frequent sweatings and a certain amount of edema, tumors, neuralgia, palsies, vertigo, wakefulness and nervous palpitation of the heart, toxic neuritis, joints and voluntary muscles often are quite painful. Hemorrhages from the various mucous surfaces not uncommon.

Masked malaria has no fever, but has neuralgia most frequently supraorbital often beginning in the morning and terminating in the late afternoon suddenly abating, also intercostal and sciatic, leukopenia down sometimes to a 3,000 monocytosis and basophilic degeneration.

The diagnosis is not justified unless the symptoms yield readily to a therapeutic specific or the parasite is found. In most cases of this type of the disease we were able to find the estivoautumnal parasites.

There are two kinds of enlarged spleens; the soft, turgid with blood, acute and transitory; and the hard spleen caused by the mobilization of phagocytic tissue, slow to return to normal.

The body rarely or never succeeds in completely eradicating a malaria infection. Canaries, after inoculation with malaria, usually remain infected all the rest of their lives.

During a long latency the control of the body over the parasites may relax to such an extent that the peripheral blood becomes thronged with parasites as in a clinical attack, although no symptoms whatever are produced. Such a person becomes an "apparently healthy carrier."

It is astonishing to see those whose minds are completely closed to the possibility of malarious infection manifesting itself in anything but a frank syndrome of chills, fever and sweats.

DEATH often lurks under an overhanging epiglottis.—*Jackson.*

NEWS

THE SOUTHEASTERN SURGICAL CONGRESS

TENTH ANNIVERSARY POST-GRADUATE SURGICAL ASSEMBLY, ATLANTA, MARCH 6TH-8TH, BILTMORE HOTEL

The following is a partial list of speakers and subjects:

For information write—

DR. B. T. BEASLEY, Sect.-Treas.

701 *Hurt Bldg., Atlanta, Ga.*

Abell, Irvin, Louisville—C. Jeff Miller Memorial Lecture

Alvarez, Walter, Rochester—Treatment of Gastro-Intestinal Disease

Babcock, W. Wayne, Philadelphia—Interior Exteriorization in Abdominal Surgery

Bunch, George H., Columbia—Acute Epidural Abscess With Compression of Cord

Campbell, Meredith F., New York City—Urologic Surgery in Children

Cason, T. Z., Jacksonville—Medical Pathology Simulating Acute Surgical Conditions

Cooke, W. E., Galveston—Surgical Treatment of Suppurative Salpingitis

Crile, George W., Cleveland—Surgical Treatment of Essential Hypertension

Dickson, Frank, Kansas City—Surgical Reconstruction of the Arthritic Patient

Fishbein, Morris, Chicago—Fads and Quackery in Healing

Flothow, Paul G., Seattle—Advances and Retreats in Neurological Surgery

Gage, Mims, New Orleans—Acute Cholecystitis

Haggard, W. D., Nashville—Gall Bladder Syndromes—*Clinic*

Hart, Deryl, Durham—Parathyroid Tumors

Hendon, A. G., Louisville—Negative Pressure in the Bladder, Kidney Function

Hertzler, Arthur, Halstead, Kan.—The Goiter Heart—*Clinic*

Johnson, W. O., Louisville—Emotional Disturbances with Pelvic Symptoms

Kessler, Henry H., Newark—Rehabilitation

Lockwood, A. L., Toronto—Surgical Life Guards

Lyerly, J. G., Jacksonville—Transection of the Prefrontal Lobe Association Fibres

Maguire, Daniel, Charleston—Hand Infections and Their Treatment

Mahorner, Howard, New Orleans—Optimum Delay for Operation Following Appendiceal Complications

McGee, J. L., Memphis—Immediate versus Delayed Treatment of Acute Appendicitis—A Statistical Study

McKay, R. W., Charlotte—Vesico-Vaginal Fistula

Mixter, William J., Boston—Epilepsy in Neurosurgery

Norland, Lloyd, Fairfield, Ala.—Management of Acute Thyroid Disease

Penberthy, Grover C., Detroit—Control of Paralytic Ileus by Intestinal Intubation

Rankin, Fred, Lexington—Bleeding Peptic Ulcer—Indications for Surgery

Reid, Mont R., Cincinnati—The Mortality of Appendicitis—A National Disgrace

Rippy, Edward L., Nashville—Carcinoma of the Stomach

Roesler, Hugo, Philadelphia—Some Cardiovascular Problems of Surgeons

Ruddock, J. C., Los Angeles—

Singleton, A. O., Galveston—Splenectomy

Stewart, W. H., New York City—Cine-fluroscopic Studies in Diseases of the Chest

Trout, Hugh H., Roanoke—Radical Operation for Carcinoma of the Breast—Motion Picture in Colors

Ward, George Gray, New York City—Uterine Displacements

BUNCOMBE COUNTY MEDICAL SOCIETY

On December 5th, Dr. Schoenheit, presiding, the 20th meeting of the Society was called to order at the City Hall at 8 p.m., 61 members present.

Notes of appreciation from the families of Drs. Meriwether, Woodcock and C. P. Edwards were read.

Visitors introduced: Drs. Osborne and Smith from Waynesville, Duckett from Canton, McDonald and Maillette from Hendersonville, Mr. Ferrell and Mr. Eller of Asheville, and Dr. Bunts of Asheville.

Dr. Moore reported for the Medical Economics Committee on a letter from the New Hanover Medical Society decrying the drastic cut in fees by the Industrial Commission. Dr. Moore's report was moved acceptable by Dr. C. H. Cocke, seconded by Dr. Freeman, and unanimously passed.

Dr. B. O. Edwards reporting for the Smoke Abatement Committee stated that action was promised in the matter by the city council. The report was moved accepted by Dr. Johnson, seconded and passed.

Dr. Karl Schaffle, then presented his paper of the evening A Plea For Socialized Medicine.

Dr. Mary Frances Shuford, presented her paper, An Experiment in Capitalistic Medicine.

On December 19th at the Grove Park Inn, the 22nd meeting of the Society, 75 members present.

Annual reports of committees:

Public Health and Legislation; Dr. C. H. Cocke, chairman.

Medical Economics; Dr. J. A. Moore.

Medical Ethics; Dr. C. C. Orr.

Publicity; Dr. W. L. Grantham.

Membership Committee; Dr. Hollyday.

Constitution and By-Laws; Dr. G. L. Tennent.

Award; in the absence of Dr. Crow, Dr. R. C. Scott reported that it was unanimous opinion of the committee that Dr. J. T. Saunders had presented the best paper before the society in 1938. Congratulations from the president on behalf of the society to Dr. Saunders.

Certified Milk Commission; Dr. J. W. Hutton.

Relief; Dr. W. T. Freeman.

Obituaries; Dr. J. B. Greene.

Cancer; Dr. G. W. Murphy.

Chamber of Commerce; Dr. Paul H. Ringer.

Secretary's report; Dr. G. W. Kutscher, Jr.

Treasurer's; G. W. Kutscher, Jr.

Nominating; Dr. C. H. Cocke, chairman, Dr. J. B. Greene, and Dr. W. L. Grantham.

For president-elect, Dr. Cocke read the names of Dr. Wilson Pendleton, Dr. H. S. Clarke and Dr. W. M. Hollyday. On the second ballot Dr. Hollyday was elected.

For vice-president the names of Dr. A. B. Craddock and Dr. R. C. Scott were offered, Dr. Craddock elected on the first ballot.

For the office of secretary-treasurer one name, that of Dr. G. W. Kutscher, Jr., was offered It was moved by Dr. J. A. Moore and seconded by Dr. Crawford Gillespie that this election be by acclamation, passed.

As a new member for the Board of Censors, Dr. R. A. White's name was offered, moved by Dr. J. A. Moore seconded by Dr. Schoenheit to be by acclamation, passed.

Dr. White then requested Dr. C. C. Swann and Dr. L. M. Griffith to conduct president-elect Hollyday to the rostrum.

Dr. Cocke then announced the names of the nominees as delegates to the North Carolina Medical Society meet-

ing next May as follows; Drs. B. O. Edwards, G. W. Murphy, P. H. Ringer, M. L. Stevens, S. C. Gillespie, C. A. Hensley and T. R. Huffines. Dr. MacRae moved that they be elected as a body and by acclamation, seconded by Dr. Johnson and passed.

Dr. White then introduced the new president, Dr. W. R. Griffin, who took charge of the meeting with a few brief remarks of appreciation for having elected him to the office of president. Dr. Griffith made a few announcements about the January meeting of the Medical Society and called for adjournment.

G. W. KUTSCHER, JR., M.D., Sec'y.

THE RUTHERFORD COUNTY (*N.C.*) MEDICAL SOCIETY held its regular monthly meeting at the Rutherford Hospital Dec. 15th with a good attendance. Matters of interest discussed. The following officers were elected:

President, Dr. C. H. Whims, Rutherfordton; vice-president, Dr. C. S. Jones, Cliffside; sec.-treas., Dr. C. F. Glen, Rutherfordton; delegates to State Medical Society (which will meet in Bermuda next May): Drs. R. H. Crawford, Rutherfordton and W. T. Head, Campobello (S. C., RFD. No. 1).

The society has invited the THERMAL BELT MEDICAL SOCIETY to hold the Mid Winter Meeting some time about 19th Jan. at Rutherfordton, instead of at Marion.

DR. AMOS NEAL JOHNSON, Garland, is president of the Sampson County Medical Society for 1939. DR. J. S. AYERS, Clinton, was elected secretary.

DR. M. W. DELOATCH was elected president of the Edgecombe-Nash Medical Association at a recent meeting at Rocky Mount. Other officers elected were: First vice-president, DR. W. C. NOEL, Rocky Mount; second vice-president, DR. H. O. PEARSON, Pinetops; secretary and treasurer, DR. L. L. PARKS, Tarboro.

DR. K. S. BLACKWELL is the new president of the Richmond Academy of Medicine.

DR. S. A. RHYNE has been elected president, DR. ANGUS HINSON vice-president, and DR. F. R. FLEMING reelected secretary of the Iredell-Alexander County Medical Society.

A portrait of the late DR. COITE L. SHERRILL, of Statesville, has been presented by the American Legion Auxiliary to the Hurst Turner Post of the American Legion at Statesville.

DR. FRANK S. JOHNS, of Richmond, was host to many of his medical friends at a game supper at his home on December 14th.

DR. J. W. CHOATE, of Salisbury, has been elected president of the Rowan-Davie County Medical Society.

DR. ROY W. FRANKLIN, house physician at Bellevue Hospital, New York city, has been appointed senior resident physician at Doctors Hospital, New York City. Dr. Franklin is the son of Mr. and Mrs. E. W. Franklin, Fairview road, Raleigh, and brother of DR. E. W. FRANKLIN, JR., of Charlotte, DR. KENNETH FRANKLIN, of Raleigh, and DR. WORTH FRANKLIN, of Woodbury, N. J.

TUBERCULOSIS

(Continued from Page 14)

immunizing agents, and should work with unrelenting fervor to control tuberculosis by preventing the spread of t. bacilli from the sick person or the carrier to the uninfected.

All persons who have lesions of such an extent that their disease cannot immediately be rendered noncommunicable should be isolated at once, preferably in hospitals. As long as these patients are left in their homes they will pass on tubercle bacilli to their associates. In Detroit, general hospitals have been used for this purpose to excellent advantage for a number of years. Students and members of the nursing and medical professions, orderlies and maids, and all others who come in contact with the patients must be protected through the adoption of a technic as strict as that employed to protect against other contagious diseases.

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

INHALANT No. 77

An Ephedrine Compound used as an inhalant and spray, in infections, congested and irritated conditions of the nose and throat. Relieves pain and congestion, preventing infection, and promotes sinus ventilation and drainage without irritation.

Description

Inhalant No. 77 contains Ephedrine, Menthol, and essentials oils in a Paraffin oil.

Application

Can be sprayed or dropped into the nose as directed by the Physician.

Supplied

In 1 ounce, 4 ounce and 16 ounce bottles.

Burwell & Dunn Company

Established Manufacturing *Pharmacists in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U.S. on request

Dr. George W. Joyner, of Durham, who has been assistant to Dr. Deryl Hart, chief surgeon of Duke Hospital, will go to Asheboro after the first of the year to become resident surgeon for the Randolph Hospital. Dr. Joyner took his medical training at Wake Forest college for two years and was graduated from the School of Medicine at Duke University in 1932, specializing in surgery.

Dr. Carrington Williams, Richmond, announces the removal of his office to 816 West Franklin Street.

Dr. T. M. Henry, of Rockingham, succeeds the late Dr. A. C. Everett, also of Rockingham, as Richmond County prison camp physician.

Col. James Stevens Simmons, of the United States Army, has been visiting relatives in North Carolina during the holidays.

Dr. N. Thomas Ennett, health officer of Pitt County, at Greenville, N. C., spent a few days with friends and relatives at his old home in Richmond during the holidays.

Dr. Beverley Randolph Wellford has been made a regent of The Confederate Memorial Literary Society of Richmond.

Dr. and Mrs. H. B. Ivey, Goldsboro, North Carolina, celebrated the twenty-fifth anniversary of their marriage during Christmas week.

Dr. and Mrs. C. A. Blanton, of Richmond, were tendered a reception at the home of their son, Dr. Wyndham Bolling Blanton, on December 27th, on the occasion of their Golden Wedding.

Dr. Beverley R. Tucker, of Richmond, has favored a number of his friends with a copy of some of his more recent collected poems in a small volume entitled *Various Verse*. The poems have been favorably reviewed

Dr. R. M. Caldwell, a native of Galax, Va., will be associated in practice at Mount Airy with Dr. T. H. Worrell, who has been a practicing physician in that town for the past 20 years.

Dr. Moir S. Martin, Mt. Airy, is the new president of the Surry-Yadkin Counties (N. C.) Medical Society.

Mecklenburg County Medical Society

Regular meeting Medical Library, Charlotte, Dec. 20th, 8. A case (surgical) was reported by Dr. W. S. Cornell; a paper by Dr. W. B. Bradford on Endometriosis. The guest speaker, Dr. Parker Hardin, of Monroe, spoke on Skin Grafting in Burns.

Warren County (N. C.) Medical Society

Dr. T. J. Holt, Wise, is the new president of the Warren County Medical Society; Dr. H. H. Foster, Norlina, secretary and treasurer. Dr. W. D. Rodgers, Jr., Warrenton, was indorsed for county health officer for two years to succeed Dr. C. H. Peete. Dr. H. H. Foster and Dr. C. H. Peete were recommended for membership on the county board of health for two years, succeeding Dr. G. H. Macon and Dr. F. P. Hunter.

Lee County (N. C.) Medical Society

Dr. A. A. James, Jr., Sanford, will be president of the Lee County Medical Society for the coming year, succeeding Dr. J. H. Patterson, of Broadway. Dr. Lynn McIver, Sanford, was chosen vice-president, and Dr. Waylon Blue, Jonesboro, was reelected secretary and treasurer.

Rutherford College to be Hospital

Drs. Y. S. Palmer, F. O. Foard and C. K. Lynn, Valdese physicians, plan to convert the discontinued college into a general hospital. They will serve on the hospital staff with the possible addition of two other members. Completion of present plans is expected to make possible by January 15th the start of alterations for the ten-year old dormitory building, known as Burke Memorial hall. This would mean that the institution would open its doors to patients by about March 15th. A 25-bed capacity would be provided at the start, with a view of ultimately expanding to 50 beds, for which the remodeled building offers ample space.

....The American Association of Pathologists and Bacteriologists will hold its 1939 meeting in Richmond next April at the Medical College of Virginia. Five hundred are expected for the convention. President of the association is Dr. Earl B. McKinley, of Washington. Co-chairmen for the meeting are Dr. Frank Apperly, Medical College pathologist, and Dr. Frederick W. Shaw, Medical College bacteriologist.

Reappointed to Board of Health

Dr. J. T. Battle and Dr. Neal Sheffield, both of Greensboro, and Dr. H. L. Brockmann, of High Point, have been reappointed members of the Guilford County Health Department.

Dr. Taft Finds Radium In Petersburg Dump

Petersburg, Va.—Dr. Robert B. Taft, Charleston radiologist, was engaged to search for three or four thousand dollars worth (50 milligrams) of radium which had been lost from the Petersburg Hospital. The radium was believed to be in the city dump. Dr. Taft, armed with an electroscope, arrived in Petersburg January 4th and 20 minutes after his quest had been launched the missing vial was discovered in a heap of trash in the dump. Dr. Taft said that 107 cases of radium losses had been reported to him by doctors during the past few years and that 59 complete recoveries and 11 partial recoveries had been made through the use of the electroscope.

Catawba Valley (N.C.) Medical Society

Morganton, January 10, at 2 p.m.

1. Glaucoma, by Dr. Gilbert M. Billings, Morganton.
2. Eye, Ear, Nose and Throat Items of Interest to Other Physicians, by Dr. Harold Walker Griffin, Hickory.
3. The Practical Handling of Adult Uncomplicated Diabetes Mellitus, by Dr. L. A. Crowell, Jr., Lincolnton.

Officers elected for 1939:

L. A. Crowell, Jr., M.D., Secty.-Treas....

Virginia State Hospital Affairs

Dr. D. L. Harrell, Jr., first assistant physician at the State College for Epileptics and Feeble-minded at Lynchburg, has been appointed superintendent of the provincial Petersburg State Colony.

Among other changes, Dr. Louis X. Kolopinski was promoted from senior assistant physician to first assistant hospital physician at the Central State Hosptial at Petersburg.

Dr. J. O. Hurt, assistant physician at the Western State Hospital at Staunton, will be transferred to Lynchburg to succeed Dr. Harrell as first assistant physician.

"In view of the vacancy that will be created by Dr. Hurt's transfer," Senator Goode reported, "the board decided that, instead of filling this position, it would

create the office of director of clinical psychiatry at the Western State Hospital and would request the Governor to approve such additional salary and prerequisites as may be appropriate for the position."

The Petersburg institution to which Dr. Harrell was appointed is scheduled to begin operations January 1st. It was created for the care of Negro feeble-minded by the last General Assembly.

Dr. Harrell has served in his present position at Lynchburg since 1931. He also has been clinical director at the hospital for several years, during which period the institution was added to the approved list of hospitals by the American College of Surgeons.

He is 34 years of age, married and has one child. In 1926, he completed academic work at Elon College in North Carolina and, four years later, was graduated in medicine from the Medical College of Virginia. His internship was served in the hospital division at the University of Virginia.

The board adopted a resolution noting that the Medical College of Virginia plans to allot an entire floor of the new general hospital building, now under way, to the care of patients suffering from acute mental illness and proffered its cooperation in any way possible.

Seaboard Medical Association

The association held a successful meeting at Greenville, N. C., in December. Next year's convention will be held at Virginia Beach.

Dr. Julian Rawls of Norfolk is the new president succeeding Dr. W. I. Wooten of Greenville.

Other officers are Dr. W. M. B. Brown of Greenville; Dr. J. Lewis Rawls of Suffolk, Va., Dr. J. A. Payne of Sunbury, Dr. Southgate Leigh of Norfolk, vice-presidents, and Dr. C. P. Jones of Newport News, (reelected) secretary and treasurer.

Hospital Facilities as Memorials

Winchester Memorial Hospital has enlarged its facilities and a number of departments have moved into a large fireproof wing, designed to provide more space and modern equipment for the operation of x-ray and pathological laboratories, and a department of physical therapy. Also in the same addition is an emergency operating room for first-aid treatment of accident cases. Dr. Hunter H. McGuire, president of the hospital board, said the improvements were made with funds provided by unidentified persons as memorials to relatives.

The Spencer Sanitarium in Goldsboro, unused for the past several years, was partly destroyed by fire early in the morning of December 10th. The sanitarium was operated for a number of years by Dr. William Spicer. Dr. M. L. Carr, of LaGrange, purchased the building several months ago and planned, it was reported, to reopen the institution shortly after the first of the year.

The recently organized James River Medical Society embraces the counties of Buckingham, Cumberland and Fluvanna in Virginia. The officers are: president, Dr. J. H. Yeatman, Fork Union; vice-president, Dr. N. P. Snead, Cartersville; secretary-treasurer, Dr. E. J. Haden, Ore Bank

MARRIED

Dr. Ben Nealy Miller, Jr., of Columbia, South Carolina, and Miss Ruth Elizabeth Gambill, of West Jefferson, North Carolina, were married on December 27th. Dr. Miller is a graduate of the School of Medicine of Duke University. The bride, a daughter of Dr. James C. Gambill, is a graduate of the Duke School of Nursing.

Dr. Horace Gilmore Strickland, and Miss Agnes McIntyre Leak, both of Greensboro, December 28th.

Dr. Daniel Niven Stewart, of Hickory, and Miss Nan Norman, of Gastonia, were married in Norfolk at the home of the bride's sister on December 22nd.

Dr. Arthur Sumner Brinkley, of Richmond, and Miss Constance Elizabeth Brown, of Greenwich, Connecticut, were married January 3rd.

Dr. Reginald Henry Mitchell and Miss Katherine Palmer Foote, both of Washington City, were married on December 11th. The bride formerly lived in Newbern.

Dr. Meyer Vitsky and Miss Sara Straus, of Richmond, were married on December 27th.

Miss Gwendolyn Ann Lewis and Dr. Frank Herman Oppleman, both of Richmond, Jan. 7th.

DEATHS

Oldest Doctor Dies

Dr. William M. Guilford, of Lebannon, Penn., died of pneumonia at his home just two weeks after he had observed his 106th birthday. Dr. Guilford was the oldest doctor in Pennsylvania and the oldest alumnus of the University of Pennsylvania. Dr. Guilford withdrew from his practice gradually, and still retained some activity in work as recently as 1934, eighty years after he had begun his career as a physician. He celebrated his 101st birthday, in 1933, by walking a mile, smoking his normal daily quota of five cigars and reading his three newspapers. Born at Lebanon the month which saw Andrew Jackson elected for his second term as President of the United States, Webster, Clay and Calhoun were in their prime during Dr. Guilford's days in school and college. His grandfather, Simeon Guilford, fought through six years of the Revolutionary War, serving under General George Washington.

Dr. A. C. Everett died at his home at Rockingham, N. C., December 26th, after a heart attack which he suffered on Christmas afternoon. Dr. Everett was 65 years old, and had practiced medicine in Richmond County since 1899. Dr. Houston Everett, of Baltimore, is a son.

Dr. B. R. Kennon, 67, Norfolk eye, nose and throat specialist, died of a heart attack at his residence in the morning of December 27th.

Dr. Wilbur Ray, 37, of Clinton, N. C., was killed in an automobile accident 14 miles south of Fredericksburg, Va., Dec 28th.

Dr. William A. Trivette, 40, founder and proprietor of the Trivette Clinic, Iredell County, N. C., died the week before Christmas of pneumonia.

Medical College of Virginia

Dr. Porter P. Vinson, professor of bronchoscopy and esophagoscopy, was present for the thirteenth Stanford Chaille Memorial Oration at New Orleans, December 12th. Doctor Vinson spoke on Aids in the Early Diagnosis of Primary Bronchial Malignancy.

Dr. Walter E. Vest, of Huntington, W. Va., (Med. 1907) elected president of the Southern Medical Association, was a recent visitor to the college.

The Founders' Day exercises on December 1st were well attended by students, faculty and friends of the college. Mr. Virginius Dabney, Editor of the Richmond *Times Dispatch*, spoke on Medicine in a Changing World.

The enrollment for the session of 1938-39 shows 312 in medicine; 141 in dentistry; 119 in pharmacy; 135 in nursing—a total enrollment of 707. In medicine there are 36 women registered, two in dentistry and seven in pharmacy.

The college was host to the Session on Zoological Sciences of the first Virginia meeting of the American Association for the Advancement of Science in Richmond, December 27th to 31st. The Sub-Section on Dentistry also had its headquarters at the college. Some 400 papers were presented in these two sections, the one on Zoological Sciences being one of the largest in the A. A. A. S.

BOOKS

THE TREATMENT OF FRACTURES. by Charles Locke Scudder, A.B., Ph.B., M.D., F.A.C.S., Consulting Surgeon to the Massachusetts General Hospital; Formerly Assistant Professor of Surgery at the Harvard Medical School; Fellow American Surgical Association; Member of the American Society of Clinical Surgery. Eleventh edition, revised; with 1717 illustrations. *W. B. Saunders Company,* Philadelphia and London. 1938.

The author says that industry and reckless driving have greatly increased fracture work in the practice of the general physician; that the book has been rewritten in accordance with advanced knowledge; and that, while there are several good ways of treating almost any fracture, he has described only those methods which experience has convinced him will give *best* end-results. The book has contributions on special subjects from 20 surgeons, radiologists and pathologists of various cities. *Scudder* maintains its long-held proud position in the front rank of medical publications.

DISEASES OF THE NOSE, THROAT AND EAR: by Wallace Morrison, M.D., Clinical Professor and Chief of Clinic, Department of Otolaryngology, New York Polyclinic Medical School and Hospital. 675 pages with 334 illustrations. *W. B. Saunders Company,* Philadelphia and London. 1938. Cloth, $5.50 net.

Material gathered for teaching postgraduate classes is here offered in book form, with what change of dealing may have seemed necessary to best serve undergraduate medical students and doctors in general practice. The author leans to the conservative side in his advice as to treatment. The book is to be commended for what it includes and for what it leaves out.

SUPERFLUOUS HAIR AND ITS REMOVAL, by A. F. Niemoeller, A.B., M.A., B.S., with a foreword by M. H. Marton, M.D., *Harvest House,* 70 Fifth Avenue, New York City. 1938. $2.00.

Few affections are more unwelcome to women than superfluous hair. In their attempts to be rid of this affliction women have eagerly accepted advice that often proved harmful, in some cases fatal. Recent studies in endocrinology have opened up promising ways of getting rid of the hair and of the developmental anomalies of which the hair is an expression, and local means of dealing with the affliction have been greatly improved in recent years. All this is set forth in an attractive and convincing way.

INTERNS HANDBOOK: A Guide, Especially in Emergencies, For the Interns and the Physician in General Practice, by Members of the Faculty of the College of Medicine, Syracuse University, under the direction of M. S. Dooley, A.B., M.D., Chairman Publication Committee. Second edition, revised and reset. *J. B. Lippincott Company,* Philadelphia, London, Montreal. 1938.

A little book filled with information as to what needs to be done for patients and how to do it. Saying it is a valuable book for interns is saying that it is at the same time a valuable book for all doctors who treat patients. Many of the procedures which are ofttimes left undescribed, because it is mistakingly assumed that everybody knows how, are here described in detail.

SYPHILIS. Edited by Forest Ray Moulton. Published for the American Association for the Advancement of Science by *The Science Press,* Lancaster, Penn. 1938.

Never before, certainly not since the terrible times about the year 1500, has the public been so concerned about syphilis. Discussion of the disease in newspapers, lay magazines, debating societies, open forums and about the bridge tables since the inauguration of the compaigns of the various public health bodies has given the people generally a speaking acquaintance with this former pariah among diseases.

A committee of experts here offer reliable information on the settled points and a free discussion of the points still in controversy.

THE PEOPLING OF VIRGINIA, by R. Bennett Bean. With plates. *Chapman and Grimes, Inc.,* Boston. 1938. $3.00.

The several immigrations are described. Particulars are given of the settlement of and from Jamestown up to the Falls of the James, the Appomattox, the Rappahannock and the Potomac. The growth of plantations, introduction of representative government, Valley settlements and early explorations make interesting reading. Historical notes are given on the various counties, with brief mention of the names of some of the more prominent families. (Mention is made of the fact that Reese Bowen of Tazewell commanded a company at the Battle of Kings Mountain. It might have been added that he was killed in that battle.)

Dr. George Ben Johnston would not have forgiven the leaving out of the *t*.

The percentages of early county names are listed according to their European origins.

The book concludes with a review of some measurements and observations on several thousand members of Old Virginian families.

SYNOPSIS OF CLINICAL LABORATORY METHODS, by W. E. Bray, B.A., M.D., Professor of Clinical Pathology, University of Virginia; Director of Clinical Laboratories, University of Virginia Hospital. Fifty-one illustrations, 17 color plates; second edition. *The C V Mosby Company*, St. Louis. 1938. $4.50.

In this edition is continued the idea of the first to instruct in laboratory methods, and that they be used along with bedside methods. The many offerings as additions since the appearance of the previous edition have been chosen after critical evaluation.

THE 1938 YEAR BOOK OF GENERAL SURGERY, edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-chief of the Barnes Hospital and of the Children's Hospital, St. Louis. *The Year Book Publishers, Inc.*, 304 S. Dearborn Street, Chicago. $3.00.

A critical review with discriminating abstraction of the best of surgical articles published in 1938.

MEDICINE IN MODERN SOCIETY, by David Riesman, *Princeton University Press*, Princeton. 1938. $2.50.

In the Vanuxem Lectures delivered by the author at Princeton is developed the belief that the history of medicine is the history of civilization. These lectures are the basis of this volume.

To physicians and to the thoughtful of the general public the factual presentation and the reasoning on the facts will appeal. The book has great cultural value and it supplies reliable information on the subjects variously dealt with in various "health columns" of lay publications.

You can travel anywhere..any day... on the SOUTHERN in coaches at..

1½¢ Per Mile for each mile traveled

Round Trip Tickets

2½¢ PER MILE ➡ FOR EACH MILE TRAVELED

Good in Sleeping and Parlor Cars on payment of proper charges for space occupied.

One Way Tickets

3¢ PER MILE ➡ FOR EACH MILE TRAVELED

Good in Sleeping and Parlor Cars on payment of proper charges for space occupied.

Air-Conditioned Coaches on through Trains

ENJOY THE SAFETY OF TRAIN TRAVEL

SOUTHERN RAILWAY SYSTEM

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., FEBRUARY, 1939 No. 2

Surgical Diseases of the Colon*

FRANK K. BOLAND, M.D., Atlanta

DISEASES of the colon which may require surgical intervention are ulceration, benign growths, diverticulitis and carcinoma. Ulceration may be due to bacteria or parasites. Rankin believes a diplostreptococcus is responsible for cases of ulceration not caused by *Entamoeba histolytica*. These cases certainly should have intensive medical treatment before being subjected to surgery. As in diverticulitis, surgery is indicated only in complications, such as abscess and obstruction, and resection is done only when a comparatively short segment of the bowel is involved. Benign tumors of the colon usually are lipomata or polypi, and are not diagnosed until they cause obstruction or hemorrhage. We have had two cases of lipoma producing intussusception. It is rare that polypi can be removed, although if they are discovered and can be excised *in toto* this should be done because such growths are potentially malignant.

DIVERTICULITIS

Acute diverticulitis of the colon producing the picture of an acute surgical condition is the form in which the disease is usually met by the average physician and surgeon. Diverticulosis, the projection of small blind pockets from the wall of the intestine, is a common condition, and may be present in any part of the gut, but is found most frequently in the colon. Routine roentgen-ray examinations of 31,838 persons at the Mayo Clinic showed that 5% over 40 years of age had diverticulosis, and 12% of these developed diverticulitis. Such figures, however, probably are too high for the population in general. More diverticuli occur in the sigmoid flexure, and these are the ones most apt to cause symptoms, probably due to the narrow lumen and liability to stagnation at this point. There are two kinds of these blind pockets, the congenital pulsion type, which are covered by all the coats of the intestinal wall, as in the appendix; and the acquired type in which the mucous membrane alone pouches through the other layers of the intestinal wall.

The etiology of acquired diverticulosis is not understood. Constipation is given as a factor, but the condition is three or four times commoner in men than in women, although women are more subject to constipation. Diverticuli increase in frequency as age advances. Diverticulitis is encountered most often in rather obese men from 40 to 70 years of age, who are heavy eaters. Perhaps distention of the colon by feces and gas plays a part in the causation. The weakest part of the intestinal wall is said to be on the mesenteric border, where the blood-vessels enter; but most diverticuli are found on the opposite border of the intestine. The pea-shaped projections from the bowel may be contained in the appendices epiploicae, or are covered with fat, and are not visible on gross pathological examination.

So long as the sacs empty regularly they produce no symptoms, or, at most a slight feeling of fullness and discomfort with gaseous distention; but it is easily conceivable how feces and bacteria and putrefactive material may become lodged in one or more pockets and cause irritation or infection. If only irritation follows, the patient may experience a change in bowel habits, in which periods of constipation alternate with diarrhea, or there are incomplete evacuations. These signs also may indicate early cancer of the colon, particularly of the sigmoid, so that a patient so affected should be studied carefully, and not sent away with a diet list and some mineral oil. It is unusual for mucus and blood to be present in the stools in diverticulitis. The sigmoidoscope may reveal carcinoma, but can hardly demonstrate diverticuli. Carcinoma involves the mucous membrane; diverticulitis generally does not.

The roentgen-ray offers the best evidence of the

*Presented to the Special Annual Meeting of the Marlboro County (S. C.), Bennettsville, January 10th, 1939.

existence of diverticulosis and diverticulitis. Although these conditions have been recognized occasionally for more than 75 years, it is only since the perfection of means for visualizing the alimentary tract that the diagnosis and treatment of cases have become general. Some diverticuli may be recognized by the barium meal; but the barium enema is far more reliable, and is safer if obstruction is present or threatens. The barium meal from above may precipitate intestinal obstruction in a constricted bowel. The barium enema should not be employed during an acute attack, since the introduction of fluid into the colon might rupture a diverticulum which is on the verge of perforation. Diverticuli are better visualized in making a film after the barium enema is evacuated.

Infection of one or more diverticuli may initiate a group of symptoms and signs resembling an attack of acute appendicitis, with the left side substituted for the right. Indeed, if the patient had transposition of viscera the diagnosis of appendicitis would be justifiable. There is rather sudden onset of pain in the left iliac region, with tenderness, muscular resistance, fever, nausea, leucocytosis and, later, the appearance of a mass, due to sigmoiditis and more conspicuous than the usual inflammatory mass of appendicitis. The sigmoid mass may produce intestinal obstruction, and necessitate immediate surgical interference, or it may disappear as the symptoms subside under conservative treatment. If the mass can be felt for a longer or shorter time, as is sometimes the case, the probability of carcimona is considered. No doubt such tumors have been excised with the impression that they were malignant, and brilliant recoveries have been reported; or the spontaneous subsidence of such a supposed cancer has given opportunity for various quacks and cults to gain credit for marvellous cures.

Since only a small proportion of persons with diverticulosis ever develop diverticulitis, it is questionable whether all those who, in a routine roentgen-ray examination, are discovered to have diverticuli should be informed of the fact. Perhaps a diet and proper habits of eating and evacuation had best be prescribed without a complete explanation. If the patient has had an acute attack a very definite regimen should be outlined, and overeating prohibited. Since barium given orally tends to remain in the diverticuli for one or two days, the administration of an ounce of the drug two or three times a week may prevent the filling of diverticuli with deleterious matter. Small barium enemata, to be retained, given once or twice a week, fill the sacculations more completely. In the presence of an attack of acute diverticulitis, nonoperative treatment is the choice unless obstruction or abscess formation supervenes. Many attacks subside with rest, relief of pain and the administration of fluids and glucose. Cases are on record in which laparotomy revealed a single large diverticulum, inflamed or filled with pus. The removal of such a lesion has effected a cure, but the excision of several inches of acutely inflamed and infected sigmoid is a procedure to be avoided. The first stage of a Mikulicz operation (called Paul operation by the English) has been employed in some cases, generally with a fatal outcome. Intestinal obstruction calls for prompt colostomy, which may result in a permanent cure, or a radical excision and anastomosis may be done later. Abscesses must be drained. Sometimes perforation takes place into the urinary bladder or other hollow viscus, or into the ischiorectal fossa.

It is difficult to prognosticate the outcome of cases of diverticulitis treated without operation, and of course further trouble after operation is not impossible. Some patients who recover from attacks without surgical intervention remain well indefinitely, while others continue to have symptoms of varying intensity. Repeated severe attacks urge excision of the disease-bearing segment of gut; but so long as patients can be made moderately comfortable by conservative measures, operation should not be advised.

Carcinoma

A plea is made for earlier diagnosis of carcinoma of the colon. With our present knowledge of malignant disease, the most important single factor in prognosis is early diagnosis. While sometimes cancer and sarcoma develop so rapidly that it is impossible to recognize them early enough to offer any prospect of a cure, or even palliation, such cases are much rarer than the slower-growing types. This is true of carcinoma of the colon, and especially of the descending colon and sigmoid, which are the segments of the large gut most frequently attacked by the disease.

The profession does not seem to realize the high incidence of cancer of the colon and rectum. Considering these two parts of the alimentary canal as a system, it is involved in malignant growth even more commonly than the stomach. Knowing this fact it behooves us to be more on the alert for the earlier recognition of the condition.

The handicap to be overcome by doctors in general in making a diagnosis of the great majority of internal cancers soon enough to offer the patient the chance of a curative operation rather than only a palliative one is that the physician has in mind the completely formed textbook picture of the disease. We must learn to be conscious

of the presence of the malady before the classical case is established. The ideal periodic health examination in persons more than 40 years of age should include gastrointestinal series roentgenology with a view of the colon through barium enema. By such means many cases of carcinoma of the stomach and colon would be recognized early enough for cure by radical operation.

The commonest first symptom of carcinoma of the colon is a change in the bowel habits of the patient. If a patient who has been having one or more regular stools a day begins to have stools less frequently, or is subject to attacks of diarrhea, or has frequent small stools and feels that the bowel is not completely evacuated, such a patient should be studied for possible cancer of the colon. The influence of laxatives and cathartics in causing loose bowel movements in such cases should not be overlooked. Attacks of abdominal discomfort and distention and the presence and rumbling of gas in the intestine should further arouse the physician's interest. Stools should be examined for mucus, pus and blood, occult or visible.

When the disease reaches the stage of definite abdominal pain and cramps, and a mass is palpable if the person be thin, near-certainty supplants suspicion in patients of the so-called cancer age. With the assistance of the sigmoidoscope and roentgenray a positive diagnosis usually can be made, although sometimes exploratory laparotomy is required. If the lesion is not discovered until systemic signs are present, such as anemia, emaciation and cachexia, there is little hope of help from surgery.

The plea of the present paper is for the recognition and treatment of these cases before acute intestinal obstruction occurs, necessitating an emergency operation. Usually ileostomy or colostomy is the only surgical procedure that can be done at this time. Rarely is it possible to excise the growth with safety, or with hope of prolonging the patient's life materially.

In the majority of cases of colonic cancer seen by the average surgeon the early signs and symptoms have been ignored or unrecognized, and intestinal obstruction is the condition he is called upon to treat. Immediate drainage by colostomy or enterostomy, of the distended gut above the point of obstruction may prove life-saving for a longer or shorter period of time, or may be entirely unavailing. Even if life is prolonged for months, it cannot be comfortable with the existence of a fecal fistula. A higher ideal should be the aim of the physician and surgeon. In a considerable percentage of cases it is possible to remove the tumor completely and so prolong life for years.

Four-fifths of the cases of cancer of the descending colon are of the hard, napkin-ring variety, and prone to produce obstruction. The more solid character of the feces in this part of the gut and its fixation at certain points increase the tendency to obstruction. The sigmoid is the portion most liable to be involved, the splenic flexure the least. Cancer of the cecum and ascending colon occasionally cause obstruction by volvulus or intussusception; but lesions in these parts generally are large and soft and give rise to symptoms of anemia, intoxication and dehydration from loss of blood. Although the lymphatics of the right colon are more numerous than those of the left, metastases spread more rapidly from malignant growths in the left colon than from the right—a fact difficult to explain. The mobility of the cecum and right colon make radical excision of these parts easier than the same operation on the more fixed, less accessible sigmoid and left colon.

While enterostomy or colostomy for intestinal obstruction ordinarily is not attended with difficulty, the radical surgical management of the case requires sound judgment and more than average skill. Usually an enterostomy or colostomy should be done a week or ten days prior to excision of the growth. The kind of anastomosis to perform is a problem about which the most experienced surgeons disagree. Some advise end-to-end anastomosis as the routine procedure; others prefer lateral anastomosis; still others the end-to-side method. An operation of the Mikulicz or Paul type is advocated by some, and condemned by others. Too frequently, although the growth can be removed satisfactorily it is so low in the sigmoid that anastomosis is imposible, and the patient must be left with a permanent colostomy.

The operative technic to be followed must be decided by the surgeon in each individual case. Some form of aseptic anastomosis is desirable, but the maintenance of adequate blood supply and the relief of the pressure of distention on the line of sutures is more important than the type of anastomosis. The blood supply is less apt to be damaged by lateral anastomosis than by end-to-end anastomosis, and pressure on the sutures may be diminished by a temporary enterostomy or colostomy above the point of anastomosis. Not all enlarged mesenteric lymph nodes encountered in operations for carcinoma are malignant, and demonstrable metastatic involvement of other organs should not always deter us from attempting to remove the original tumor. Death from metastasis usually is less painful and less distressing than death caused by an unremoved primary lesion.

Surgical Complications of Amebiasis Diverticulitis and Cancer of the Colon*

Addison G. Brenizer, M.D., Charlotte, North Carolina

Of the honor Dr. Jennings gave me, when he asked me to discuss the paper of one of our master surgeons, I am keenly aware. I could not join this discussion with the idea of making any contribution to the subjects not already made by the author, but I lend my voice merely as a courtesy and in praise of him.

Dr. Boland says that amebiasis is not gone with the wind like smallpox, diphtheria and typhoid; but it keeps recurring, a notable instance being that from a defect in the sewer system in a Chicago hotel, which lost us such a notorious night club character as Texas Guinan. In other words, it might reappear any time, and surgeons must keep in mind one of its commonest complications, abscess of the liver. Dr. Boland in his paper in the *Annals of Surgery* issue for October, 1937, and in his lecture at a postgraduate meeting at Duke University, reports all told 16 cases of liver abscess.

All my experience with liver abscess due to ameba, with the exception of one case, about two years ago, dates back a number of years, when Dr. William Allan used to allow me to do the surgery on his cases, and when both he and Dr. Harvey Barret of Charlotte were gaining national reputations through their knowledge of amebiasis. We first did an open operation, as was done on the recent case referred to, where the liver was exposed through an extensive transverse incision, the area of abscess definitely located on the liver surface, aspirated, and opened with a thermocautery In addition, these patients were given emetine. I recall an enormous liver abscess in a Negro, the frightful prolonged drainage and liver slough; likewise, a case of empyema in a preacher, due to the rupture of a liver abscess into the right pleural cavity. The case was recognized by Dr. William Allan as liver abscess and amebic on account of the anchovy sauce and the presence of the ameba. Just after returning from war, I closed an appendicostomy, previously used to irrigate the colon with a solution of quinine and emetine.

Dr. Boland's discussion of diverticulosis and diverticulitis along with cancer of the colon is not malapropos. It is true that the mass of a diverticulitis of the colon should be distinguished from cancer if the diagnostician enters the case with an open mind. But at the present time, given a mass in the colon, he is apt to begin on the case with cancer in mind. And then, too, he is desirous of making his diagnosis before the case can be recognized across the room. Both diverticula and cancer begin to manifest themselves by altering the bowel movements; they can both gradually produce masses; the mass of a cluster of diverticula may become quite hypertrophic even to the degree of simulating the hypertrophic type of tuberculous ulcer. However, x-ray studies will usually give evidence both in favor of cancer and hypertrophic tuberculous ulcer over diverticulitis. The cancer involving the mucosa, and frequently the annular type (two-thirds of cancer of the rectum at the junction of sigmoid and rectum) will not only show a filling defect, but an annular constriction, and the hypertrophic tuberculous ulcer shows often not only a considerable laming of the bowel, but a filling defect. On the other hand, the mass of diverticulitis may show no filling defect and very little constriction of the bowel. I shall cite you three cases of diverticulitis of the sigmoid, two removed for cancer, the other ruptured and caused death from retroperitoneal peritonitis.

I think there is no doubt that diverticulitis should be treated without operation; but, once warned of a diverticulosis of the colon, the patient should be very careful of the kind of food he allows to pass his cesspool. He should be treated like one with colitis, and Dr. Boland's suggestion of bismuth by mouth or enemata to fill the diverticula seems plausible.

Dr. Boland has already mentioned the kind of anastomosis which should be done on the colon, whether it be done end-to-end or side-to-side. The doing of bowel anastomoses has brought forth in surgery some powerfully fancy and expensive instruments; also Dr. Boland, quoting Dr. D. F. Jones in speaking of so-called aseptic anastomosis of the colon, says that: "Maintenance of adequate blood supply and the relief of the pressure of distension on the line of suture is more important than the type of anastomosis." This is certainly true of the left colon where gas and hardened feces are apt to accumulate in a bowel already crippled by the disease and the operation, and no anastomo-

*Discussion of the paper of Dr. Frank K. Boland, Atlanta, before the Marlboro County (S. C.) Medical Society, Bennettsville, January 10th, 1939.

sis should be done on the left side without a protecting colostomy.

Dr. Boland also quotes Dr. W. J. Mayo in his saying that all mesenteric lymph nodes encountered in an operation for cancer of the colon are not necessarily malignant. That is true; some of them are inflammatory, but they are hard to pick out, and one is far safer in doing an operation extensive enough to remove them, regarding them perhaps a little more liberally than the lymph nodes in a radical breast amputation.

You know if we have a method of our own, we will usually lead you around to it before we get through. My method of anastomosis of the gastrointestinal tract not only eliminates the various intestinal clamps, particularly the fancy and expensive ones like those of Zachary-Cope de Martel clamp, the Furniss instrument, and even the much-used Kerr stitch; and substitutes the lowly pile clamp (of the Cooper or Kelsey variety) and even claims an advantage over them all. I feel the immodesty of such a statement, but may I demonstrate the method to you. Some of you may find the method useful. It, at least, has the advantage of employing an instrument owned by everybody doing surgery.

Several years ago, I brought to the attention of the Southern Surgical Association certain advantages of the hemorrhoidal clamp of the Cooper and Kelsey variety, placing it as a rival of the Kerr basting stitch and the Furniss instrument and pointing out that these clamps are very strong in handles and lock, the blades are very narrow and the strength of blade is gained by the addition of metal in width, whereas the usual intestinal clamp loses in strength in proportion to its narrowness. These pile clamps are powerful crushers; and in addition along their narrow blades have a ridge on one blade and a groove on the other, so that the crushed mass, whether it be a hemorrhoid or intestine, does not slip. The tissues of the intestine and stomach yield as readily, or more so, than the hemorrhoidal mass, under the crushing force of the narrow-blade pile clamp, pushing mucosa and muscularis aside until there remains in the grasp of the clamp a very narrow translucent groove, with close adhesion of muscularis mucosa and serosa. When burned with a cautery and carefully liberated from the bite of the clamp, the narrow ridge or ledge remains adherent from its own cohesion.

To make the procedure entirely safe against opening the intestine a fine piece of catgut or malleable wire is basted behind the clamp when applied to the stomach and jejunum or in the narrow cuff when liberated from the clamp. Or the intestine is clamped, clamp removed, the fine catgut or wire is basted through the crushed translucent groove, the groove recrushed and then burnt. The wire has an advantage in that it can be used to pierce the walls of the intestine and no needle is required.

When the severed ends of the intestine have been so treated by crushing and searing, and remain adhered, they are joined together by the simple procedure of abutting the two ends and sewing them together. When the abutted ends are sewn around, the catgut or wire is withdrawn and the closed ends are opened in the intestine with thumb and index finger and the anastomosis is complete

A whole loop of intestine liberated from its mesentery, or with the mesentery left intact, when the loop is free, may be grasped with a single pile clamp and the two ends of the loop in the grasp of the clamp burned away. The clamp is turned over, the intestine stitched, the clamp turned back and liberated; then the stitch carried all the way round, completing the anastomosis; or the two ends of the loop are crushed, the clamp temporarily removed, the fine catgut or wire basted through the grooves made by the clamp, the clamp reapplied, the two ends of the loop burned, the stitch started behind the clamp and continued around, or the clamp removed and the stitching done on the wire and the wire removed.

Having acquainted myself with the advantages of severing a ureter with a loop wire in a catheter after a stretch of the ureter is implanted, I have used this same device in doing an enterostomy after embedding the catheter in the intestine and have elaborated such an enterostomy, employing a Y-tube and double enterostomy distal and proximal to the anastomosis.

I have added to our equipment a couple of tonsil snares, for grasping the gut or stomach and holding on to it until resected or tucked in, or brought out through the wound in making a colostomy, particularly in resecting the rectum, while a second tonsil snare was tucked in the upper end of the rectum. The tonsil snare is also used for either snaring away the two extremities of an exteriorized intestinal loop or made to cut its way through by electro-cutting current applied to it. We have used two tonsil snares in doing an intestinal anastomosis. When the tonsil snare is used as holding instrument on the end of the stomach or gut, though already seared with a cautery, the end is covered with a rubber dam or the finger of a rubber glove positively to prevent any contamination.. A trivial but not unimportant gadget is furnished by hair clips, or bobby pins, covered with

a small rubber tubing to hold back the contents of the small intestine. A wide-mouth nipple may be used for fitting over an enterostomy or colostomy opening at the time of a second operation to protect the opening, or worn over a permanent enterostomy.

No instrument equals the pile clamp, however, for holding on to the stomach or gut, for making a narrow ledge, for hemostatis; and if the requirements of a so-called aseptic technic are: 1) an operation free from leak of contents or soiling; 2) bloodless during and after the procedure, leaving sufficient blood supply up to the union of serosa with serosa: 3) abutting closed ends toprevent leak and bleeding abutting closed ends to prevent leak and bleeding in the act of uniting the ends; 4) a narrow ledge or cuff to allow a wider opening and to prevent obstruction; 5) a technic to do away with cumbersome instruments while making the anastomosis and to do away with packs; 6) a simple procedure involving a minimum of manipulation to speed up the operation, particularly in cases of obstruction—then the pile clamp may favor every necessity.

The pile clamps and tonsil snares have been used for extensive resections of stomach, for pyloroplasty, for gastroenterostomy, for duodenojejunostomy, and for resections throughout the colon and rectum. In tight places, as where one is anastomosing the duodenum and jejunum and the colonic flexures, and down in the pelvis, it is an enormous relief to be able to crush and sear the bowel, place a basting of catgut or wire into the narrow, adhered and almost sterile cuff, and complete the anastomosis without clamps or packs.

210 Professional Building

Recent Developments as to the Biliary Tract

Vitamin K from Fish Offal

(Waltman Walters, Rochester, Minn., in *W.Va. Med Jl.*, Feb.)

For a patient who had an unremovable carcinoma of the common duct, I was able to relieve the biliary obstruction by anastomosing the dilated duct above the carcinoma to the duodenum. On the 4th postoperative day there was some bleeding from the incision and the prothrombin time was found to be 4 times the normal. After the administration of capsules of vitamin K, the prothrombin time decreased to normal limits within 24 hours; the bleeding ceased. With the increased prothrombin time, there was an increase in the coagulation time of the blood.

Although, in all probability, the most vital therapeutic agent in both the preoperative and postoperative treatment of the jaundiced patient is the administration of blood and, next, glucose, I believe that the substance vitamin K also has proved itself to be of great value.

Vitamin K is obtained from putrid "fishmeal," which consists of the scales and head and whatever else remains after everything edible has been taken from the fish. From such a substance, as well as from alfalfa, a substance is obtained which will reduce the time required for the production of prothrombin in the blood—the best indicator of the bleeding tendency.

Relationship of the General Practitioner to the Specialist and Group

(D. L. Dawson, Rice Lake, in *Wisc. Med. Jl.*, Jan.)

It is necessary that the general practitioner refer such cases as require specialized study. It is just as essential that the specialist or group refer and return such patients to the general practitioner with full information as to studies made, treatment given, prognosis and such general suggestions as may be helpful to him in the continued care of such patients. The real burden of rendering medical service is dependent upon the general practitioner.

If the present trend of limiting all surgery to so-called surgical specialists continues, many a patient now saved by the prompt interference of the general practitioner will be sacrificed because of delay in reaching one of the so-called qualified surgical specialists.

One well trained doctor may be as able as another to apply the truth of science in the treatment of disease, but the time comes in the life of each one of us when the cold facts of science do not avail. Sympathy, kindness, pity and cheerful hope—no amount of scientific efficiency can take the place of these in the dark hours of sorrow and trouble so common in the experience of all. President Elliott of Harvard, said: "In these intangible things are found the durable satisfaction of life; fame dies and honors perish, but lovingkindness is immortal."

The specialist ought always to be studious to avoid destruction of the patient's trust and confidence in his family doctor. Specialists little realizes how easily this may be done. The flick of an eyelid, a disparaging remark, or just quietly ignoring the family doctor may do irreparable damage.

The specialist should faithfully report to the family doctor upon every patient which he sees for that doctor. Only by having such material can the general practitioner serve his patient adequately. This courtesy should not be dependent upon whether or not the family doctor referred the patient directly.

Patients whose condition could be treated at home as competently and at less expense ought to be so advised.

From distant South Africa (Glen Lynden, Mooi River, Natal), Dr. W. T. F. Davies suggests: " . . . a specialist shall be in the position of a consultant, in that he may only see cases sent to him by a colleague."

The Problem of the Thymus in Children

(A. G. Mitchell & Jos. Warkany, Cincinnati, in *Jl. A.M.A.*, Jan. 28th)

An enlarged thymus gland may occasionally cause stridor and dyspnea. Many other conditions are more common causes.

Even if such a condition as status thymicolymphaticus exists, and if it is in any way related to sudden death, there is no justification for the belief that radiologic treatment or extripation of the thymus or administration of thymus extracts would have prevented such death.

Knowledge of the functions of the thymus has led to any clinical implications which are helpful in the treatment of endocrine syndromes presumably associated with thymic abnormality.

Rest in bed, sedatives, humidity, baths, antipyretics and occasionally the use of aqueous solution epinephrine or ephedrine as a nasal spray make up the most promising means at our disposal for use in a common cold.

Glaucoma — Gouty Eye*

G. M. Billings, M.D., Morganton, North Carolina

Glaucosis is a disease characterized by increased tension of the globe or sudden inpairment or loss of vision. It formerly indicated, according to von Graefe, a vague expressionless symptom, a sea-green, a bottle-green, or a dirty green background of the eye, seen through a fixed dilated pupil.

Broadly speaking, the term glaucoma is applied to all those conditions in which the intraocular pressure is abnormally increased.

The term glaucoma is of great antiquity. To the doctors of ancient times such a disease could not have been known in its early stages; neither do they appear to have recognized it as associated to any distinct form of disease, and from the time of Hippocrates to the early part of the eighteenth century, the term was applied to cataract as well as to other states.

In glaucoma it is common for both eyes to be subject to attacks, which connection depends not in the way of sympathy but upon the fact that the condition which is likely to lead to the disease usually exists in both eyes. It is usual for the symptoms, especially in the more congestive type, to be manifested in the fellow eye, months or years after the first becomes affected. It may be stated that generally the more acute the disease in the eye first involved, the shorter will be the interval before the other suffers.

There are certain well-defined symptoms common to all forms of glaucoma, all of which, however, may not be present primarily in a given case. The first and most important symptom is a rise in the intraocular pressure. The inevitable consequence of a continued increase in tension is excavating of the optic nerve and reduction with the ultimate annihilation of the sight of the eye. Tension can be judged fairly accurately with the finger tips, but the only accurate way is with the Schiotz tonometer. The normal tension varies between 12 and 27mm. of mercury, a tension of more than 27 mm. is certainly pathological.

A sudden excess of pressure obstructs the flow through the choroidal veins invariably causing the engorgement of all the corneal vessels, with more or less edema of the conjunctiva and swelling of the lids, and with the tension of the tunica raised there is a cloudiness of the cornea.

Ordinarily in glaucoma the size of the pupil is increased and its shape so altered that it is no longer round, but oval. The mobility, too, of the iris becomes sluggish, if not totally inactive; yet in some instances abnormal pupillary symptoms may be entirely absent.

The premonitory symptoms are a sudden diminution in the range of accommodation with the desire for stronger and stronger reading glasses, one or more transient attacks of dim and rainbow vision arising in one who believes himself to be free of all disorders. At times the attack manifests itself by severe pain in the side of the face and head, increasing hour by hour, and so severe as to excite nausea and vomiting. There may be flushing and fever, or the patient may be pallid and cold, profoundly depressed and prostrated. The vision is impaired.

The clinical picture may be one of intense pain, unilateral, radiating along the ciliary nerves and plexus, moderate edema of the eyelids with considerable lachrymation, intense congestion of the bulbar conjunctiva and the scleral vessels, with a dirty steamy appearance of the cornea. During the attack vision is reduced to mere preception of light; at times, even light perception is doubtful.

The treatment of an acute attack of glaucoma is dependent on reduction of intraocular pressure. If the excessive pressure can be reduced within 48 hours by either medical or surgical means, the probability is that useful vision will be restored; if the hypertension continues over too long a period useful sight is lost.

Treatment should be aimed at reduction of tension, relief of pain. It is always advisable to put the patient to bed, give a saline cathartic and reduce the fluid intake, and apply warm boric acid compresses to the eye for 20 minutes every two hours. Pilocarpine and eserine are to be instilled in the eye every 15 minutes if the case is gravely alarming, otherwise alternating with pilocarpine and eserine every two houre as indicated. The control of pain very often necessitates morphine, *without* atropine.

One should remember when a patient has an acute attack of glaucoma miotics should be used *in both eyes.* If the tension is not reduced within 48 hours by drugs, resort should be had to trephening or iridectomy, either of which should be done under general anesthesia. It is almost impossible to produce anesthesia in the highly hyperemia eye with local anesthetics.

*Presented to the Catawba Valley (N. C.) Medical Society meeting at Morganton, January 10th, 1939.

Cases occur in which the pain is so severe, and the danger of losing sight in the opposite eye so great, that an enucleation becomes imperative. A note of warning seems in order: that is, confusing glaucoma with another eye condition, and using atropine. Atropine in these cases not only aggrevates the symptoms, but greatly increases the danger of completely destroying the sight.

Some of the common eye diseases that may be confusing are: 1) Iritis—an inflammation of the iris that may be very acute. The acute attacks set in with discomfort and aching in and around the eye and radiating usually over the brow and sometimes down the cheek. As the disease advances the pain becomes worse. It is especially severe at night, keeping the patient awake, and in a short time it becomes more constant. Vision is always more or less lowered. In an iritis atropine should be used.

2) Conjunctivitis at this time will confuse.

3) Ulcer of the cornea will cause edema, redness and pain.

4) Foreign bodies in the eye, too, may confuse.

5) And lastly, one may mistake a primary optic atrophy for a glaucomatous cupping.

We can hardly counsel too often that every doctor should be on the lookout for glaucoma, for it is the commonest cause of blindness, and blindness that can, in the vast majority of cases, be prevented. We can hardly warn too often against the indiscriminate habit of prescribing eye-drops or eye-ointments containing atropine. And it is well to remember that in some very acute cases of glaucoma vomiting is so pronounced a symptom as to direct attention to the gastro-intestinal tract, and allow sight to be lost when it could have been saved by prompt attention to the eyes.

Thymic Hyperplasia

(C. E. Hasley, Detroit, in *Jl. A.M.A.*, Jan. 28th)

Discussion by

Dr Edith Boyd, Minneapolis: The concept of status thymicolymphaticus arose because thymuses from persons dying of such wasting diseases as tuberculosis and gastroenteritis were considered normal while the normal prominent thymus was called pathologic.

Dr. Herbert E. Coe, Seattle: In an experience covering some 2500 operations on infants under 18 months it has been my misfortune to see six or eight of these thymic deaths—complete absence of respiratory effort, as if there might be inhibition or paralysis of the respiratory center. All the ordinary methods of resuscitation fail. The heart beat does not vary in rate or in character until near the end. The pink color may be restored for some time by renewing the artificial respiration, but there is no respiratory effort in spite of the fact that these children are in good physical condition and not infected or weak.

Dr. Henry F. Helmholz, Rochester, Minn.: It is evidently not known to what sudden death in childhood is due. However, I think that two things have been definitely decided, namely that thymic stridor must be an inspiratory and expiratory stridor and that sudden death cannot be prevented by roentgen treatment of the thymus.

The Prognosis of Syphilis

(H. J. Morgan, Nashville, in *Jl. A.M.A.*, Jan. 28th)

Acute syphilis, untreated, 25% of patients will attain a state of no clinical or serologic evidence of the disease; 25% will die of other causes; 15% will have blood serum evidence of syphilis but will remain otherwise free of sign or symptom; 12% will experience syphilis of skin, mucous membrane or bone; 12% will have cardiovascular syphilis; and a 13 or 14% will have neurosyphilis. In summary, somewhat less than 25% will eventually die from, or become incapacitated by, syphilis; 12% will have relatively benign active syphilis and the remainder will experience no personal menace to health from the disease.

When infection is acquired at about the time of conception, fetal syphilis will almost invariably result.

"A syphilitic woman, untreated, has only 1 chance in 6 of bearing a live, healthy infant as compared with the normal woman's 3 chances in 4."

It commonly occurs that syphilitic infection becomes established without manifestations of the acute stage of the disease.

With best treatment acute syphilis can be rendered non-infectious and cured. From 70 to 80% of the patients with early latent syphilis can be "cured" in the practical sense of that word. The treatment of late latent syphilis is of the greatest importance, since it greatly reduces subsequent morbidity and mortality from cardiovascular and benign tertiary syphilis. The early recognition and proper treatment of syphilis in pregnant women will greatly reduce prenatal and infant mortality and almost completely eradicate the tragic problem of congenital syphilis.

The outlook for the patient with syphilis is dependent in no small way on the physician who first discovers the disease. Confidence and optimism are qualities sorely needed by both patient and physician during the long months necessary if treatment is to be adequate.

Psychiatry and the Criminal Law

(D. D. Shoenfeld, New York in *Jl. Mt. Sinai Hosp.*, Nov.-Dec.)

Professor Salvador Mendoza, discussing the new System of Criminology in Mexico, stated: "The new Mexican Code abolishes the very word 'punishment.' It is inspired by the conception that society does not need to be angry and to be bitter against criminals in order to keep the welfare of the community. It was enough to assume that criminals are dangerous for the common interests of society. Nevertheless it seemed to us that society would have a better chance to combat the evil of crime, if it could acquire something like the coldness and simplicity of physicians and surgeons when they cut and cure."

The individual accused of a crime should be tried only on the question of fact pertaining thereto. If on a factual basis he is found guilty, he should be sentenced to a prison which should be in reality a classification clinic.

It is only after trial, in such a classification clinic, that an ideal examination can be made and the results presented to a board consisting of, possibly, a lawyer, a psychiatrist, a sociologist and a criminologist. On the basis of their analyses and conclusions the length of sentence would be determined and the prisoner committed to an appropriate institution. No longer then will the punishment fit the crime but will fit the criminal.

Calcification of Cystadenoma of the Thyroid*

CHARLES BUNCH, M.D., Charlotte, North Carolina

CALCIFICATION of a cyst of the thyroid gland is a comparatively rare condition, and calcification of an entire lobe of the thyroid is still more so. Reports of only nine such cases were found by Beachler and Woodhouse, in a review of the literature for the 15 years prior to 1933. These writers added two cases in their report, one of simple partial calcification of cystadenoma of the thyroid, the other partially calcified cystadenoma with sinus formation. I find no cases reported since 1933, so it appears that only 11 such cases have been reported in the past 20 years.

The first case of calcified adenoma of which we find a record was reported by Pennel in 1917. The patient had had aphonia for three months, and a mass the size of a walnut had formed in the region of the left lobe of the thyroid. No radiological examination was made and the diagnosis of carcinoma of the thyroid was given. At operation, a craggy hard mass was found, which was believed to be calcified parathyroid tissue.

Arens and Bloom reported a case in which there were no thyroid symptoms, but on fluoroscopic examination of the chest a calcified mass of considerable size was discovered in the region of the left lobe. The case was not operated upon.

Clark writes of a case with symptoms of hyperthyroidism of ten years' duration. When seen the patient was complaining of symptoms of hypothyroidism and had a mass over the sternal notch. Radiological examination revealed a well-defined tumor with calcification extending into the thyroid gland. The case was not operated upon.

Plummer discovered five cases which were examined by means of x-rays but which were not operated upon. They were diagnosed as calcified thyroadenoma and the calcification was believed to be beneath the capsule.

Rombo and Levi had a patient with dyspnea, but no hyperthyroidism. At operation, a calcified cyst of the thyroid, weighing 150 grams, was removed.

The two cases of Beachler and Woodhouse were the last to be reported. In one there was a mass in the right side of the neck and a draining sinus in the midline. The patient was complaining of pressure symptoms, but no symptoms of hyperthyroidism. The metabolic rate was found to be plus 20, and a thyroid tumor, partially calcified, weighing 45 grams was removed in two masses. This is the only case of calcified cystadenoma of the thyroid with sinus formation reported. Their second case had both pressure symptoms and symptoms of hyperthyrodism. The basal metabolic rate was plus-41. The enlargement was in the right side of the neck and about the size of a hen's egg. No weight was given of the tissue removed. Calcified areas were found in both lobes.

The case which I shall report is the twelfth reported during the past twenty years, in so far as is revealed by a rather intensive search of the literature.

The pathology of the condition is not entirely understood. One lobe seems to be involved about as often as the other. "Deposits of lime salts in various organs, occurring without previous degenerations in these organs, are called metastatic calcifications." (Virchow). Metastatic calcifications have been reported in various organs, including the thyroid in dogs injected with overdoses of parathyroid extract, according to experiments by Hueper. That calcium is deposited in areas where the amount of carbon dioxide of the blood is decreased is stated by Watt, and this is concurred in by Barille and Wells. This is usual in regions in which blood supply is seriously reduced, such as areas of necrosis, fibrosis and thrombosis. In certain cases calcium salts may be precipitated around the colloid of the thyroid gland because of the reduction in the carbon dioxide content of the blood. Some clue to calcification of the thyroid may be found in the relationship between the parathyroid bodies and the activity of the gland.

The action of the parathyroid hormone is, according to Hueper, the cause of hemorrhage, thrombosis, necrosis and, at times, calcification in the interstitial tissues of certain organs. No explanation can be offered, he also states, as to the cause of precipitations in the thyroid gland and the relation of its structure to the localization of calcium deposits. Differences apparently exist, he noted, in the reaction of the interstitial tissues of the normal and that of the hyperplastic gland.

Watt believes that the calcium salt most frequently found deposited in thyroid tissue is calcium carbonate.

The case which I operated upon and report is as follows:

A white widow, aged 47, complained of a swelling in her neck and nervousness for the past six months. Fifteen years ago she noted enlargement

*Presented before the Mecklenburg County Medical Society, Charlotte, June 7th, 1938.

in neck which she attributed to goiter. The enlargement was gradual and without symptoms until six months before, when she noted some increase in appetite, some general weakness and a rather rapid loss of weight; insomnia, palpitation of the heart and general nervousness. From the onset of symptoms she noted some decrease in the size of goiter. The symptoms grew worse for the past six months, with a loss of 37 pounds in this time. She worried about the persistent enlargement in her neck, and this probably caused some of the loss in weight.

She had the common diseases of childhood, no rheumatic fever nor tonsillitis. Typhoid fever complicated her first pregnancy at the age of 17. There was a negative venereal history.

Radiological examination showing tumor of left side of neck

Her father died an accidental death, her mother of cardiac disease at 84. She has two sisters and one brother living and well. One sister died of pneumonia. Two brothers are dead, one of bronchitis and one of pellagra. There was no family history of diabetes, tuberculosis or mental diseases. This is the only case of goiter in the family.

Menstruation began at the age of 16, of the 28-day type and of three days' duration. No dysmenorrhea or menorrhagia. Menopause occurred at 45.

Her husband died of heart disease in September 1936. The patient has three children living and well. Three children died in infancy—one of pneumonia at 2 years, cause of death of the other two undetermined. The patient's first three pregnancies terminated in miscarriages at 3 and 4 months. Last pregnancy occurred 12 years ago.

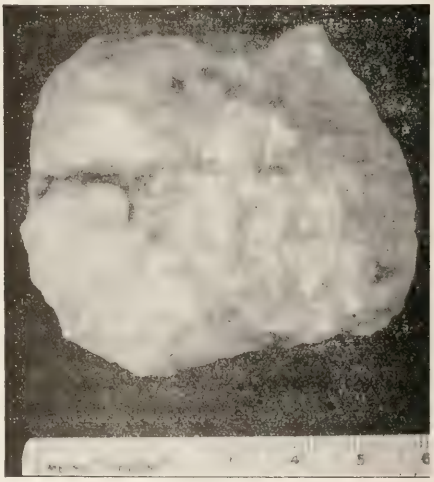
For the past six or eight years, she at times has had some abdominal discomfort after eating certain foods. Nausea and vomiting sometimes occurred, usually subsiding without medical treatment. Her habits were good. She had never been operated upon up to the time of her hospitalization.

Her average weight was 170 pounds, at the time of admission to the hospital on April 11th, 1937, 133 lbs. Her general appearance was good, p. 88, b.p. 120/75. She was not particularly restless, a slight tremor of the hands, no exophthalmos.

There was a movable mass the size of an orange in the neck in the position of the left lobe of the thyroid. It was of rock-like hardness, slightly irregular in contour. The overlying skin was normal in appearance and was not attached. The right lobe and isthmus of the thyroid were not palpable. There was no other glandular enlargement.

Some tenderness was elicited by deep palpation in the gallbladder region. No jaundice or pigmentation of skin. Slight varicosities in both legs. Urine was normal, w.b.c. 6,800, Kahn negative, basal metabolic rate plus-31.

Diagnosis was made of calcification of the left lobe of the thyroid.



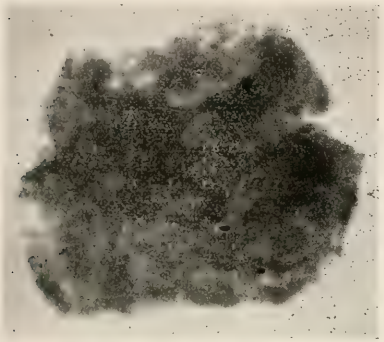
Photograph of thyroid tumor after removal, showing actual size by metric measure

On April 14th, under general anesthesia of ethyl chloride and ether, the entire left lobe of the thyroid was found high up and the size of a closed fist, very hard and nodular, capsule well-developed, right lobe insignificant, no isthmus. The operation consisted of a total left intracapsular lobectomy.

One small thyroid drain was used. The operation lasted 30 minutes.

Convalescence was uneventful, dismissal on the fourth day. There was very little drainage, clips and drain removed on the third day. The patient returned to the office three or four times for dressings. The incision healed with very little scar and, when last seen, the patient weighed 132 pounds.

Pathologist's report: The specimen consists of a calcified mass measuring 55x45x23 mm. On section, there are no areas of soft tissue. The mass weighs 69 gms. After decalcification, the specimen shows dense fibrous-tissue bands enmeshing calcified material. There is no recognizable thyroid tissue present.



Radiological examination of tumor after removal, showing dense calcification.

Diagnosis: Calcified cystic adenoma.

Because the patient has been out of town for some time, her metabolic rate has not been taken since she left the hospital. Her family reports, however, that her present weight is 146 pounds, that she eats and sleeps well and that her nervousness has disappeared. There are no longer any attacks of palpitation. It is, therefore, reasonably assumed that her metabolic rate is within normal limits, or her general condition could not be so greatly improved.

Bibliography

1. Pennell, V., *Lancet*, March 4, 1917, -I, 459.

2. Arens, R. A. and Bloom, A. R., *Jour. of Radiology*, 9: 333-334.

3. Clark, J.J., *South. Med. Jour.*, Mch. 1920., 183.

4. Beachler, J. F. and Woodhouse, G. A., *Ohio State Med. Jour.*, 29:5, 311-314.

5. Plummer, W. A., Proceedings Staff Meetings, Mayo Clinic, 3: 191.

6. Rombo, C. M. and Levi, L. M.,*Ohio State Med. Jour.*, Mch, 1930: 230-231.

7. Hueper, W., *Arch. Path. & Lab. Med.*, 3:14-25.

8. Watt, J. C., *Arch. of Surg.* 15:89-101.

Medicine and the Law

(Hon. J. M. Gallagher, Chief Justice Supreme Court of Minn., in *Minn. Med.*, Oct.)

Prejudice has arisen against the testimony of the physician, when he appears as an expert. I think this may be traced to the great divergence between the opinions of experts in mental diseases. When the physician and the lawyer speak of insanity they do not speak of the same thing. With the physician and psychologist, mental derangement may be entirely unconnected with any doctrine of responsibility. The psychopathic personality, which expresses itself in criminality, is the very embodiment of irresponsibility to the physician. And yet, in law, we hold him responsible.

I believe that in a great majority of cases difference of opinion between medical men arise from the same reason that differences arise between other experts. *Lawyers are proverbially in disagreement*, not only as to the meaning of decisions and such differences are easily explainable when we consider how laws are enacted, enforced and interpreted.

A Lesson From a Death Certificate

(A. M. Bingham, East Orange, in *N. Med. Soc. N. J.*, Dec.)

Curettage should never be done in an abortion which shows frank sepsis. If not bleeding, nothing should be done locally, beyond an ice bag to the lower abdomen, until the septic condition improves. Transfusions are valuable.

If bleeding, any placental tissue in sight is to be removed with sponge forceps, and the alcohol drain used as follows: A catheter is inserted into the uterus, and iodoform gauze packed around it in the uterus and vagina. Through this tube 2 ozs. of 25% alcohol should be instilled every 2 hrs. day and night. After a few days the t. generally drops, and the tube and gauze are removed. The patient is then watched for a week or two, and if the t. remains normal and only a small amount of bleeding continues, she may be curetted with safety.

The Need For Prolonged Sulfanilamide Therapy in Certain Infections

(G. R. Alpert, New York and R. P. Forbes, Denver, in *Rocky Mountain Med. Jl.*, Oct.)

In severe streptococcal or meningococcal infections sulfanilamide should be *continued* for at least two weeks after the subsidence of all symptoms. The spinal fluid cell count should be decreased to below 50 cells.

Frequent white blood counts, hemoglobin percentage and sulfanilamide blood concentration estimations should be performed to guard against the development of toxicity to the drug.

Nicotine acid is used in the treatment of pellagra (weakness and scaliness), which is due to a deficiency of certain vitamins.

The reactions are harmless to the individual and should not interfere with the use of the acid in treatment. They include tingling, dizziness, itching, rash, flushing of the skin and nausea.—*Exchange.*

Duke Hospital to be Enlarged

Plans for a 200 room addition to Duke Hospital, Durham, have been announced. This addition will provide for around 100 new beds, raising the total capacity to more than 550 beds, and will provide for the expansion of the hospital's clinic services. The architecture will conform to the Gothic pattern of the other University buildings.

Treatment of Menopausal Symptoms with Estrone Preparations

IRMA HENDERSON-SMATHERS, M.D., Asheville, North Carolina

LIFE is a continuous process. There is no fixed state which can be isolated from what precedes or follows. To attempt to reduce the complex phenomena of the menopause to a rigid and fixed period is futile. The menopause is usually a slow change extending over several months to several years. A study of this period reaches all the fields of medicine. The climacteric or menopause constitutes the termination of the period of sexual maturity in woman. The external expression thereof is the cessation of the menses. The average duration of menstrual life is 32 years, but the earlier the menstrual function is established the longer it continues. Also late inauguration presages an early cessation. Pituitary underfunction may result in an early menopause and thyroid hypofunction in a late one. In general multiparous women have a later menopause, as have also the women with pelvic disease, provided the disease has not destroyed all ovarian tissue, in which case there is an early menopause. Menopausal symptoms usually result from bilateral oöphorectomy or when x-ray or radium therapy is directed to the ovaries. These symptoms appear between the 40th and the 50th years, with greatest number nearer 45 and average as 43 years. The average time elapsing between surgical operation and onset of symptoms is 10 weeks.

Menstruation in rare instances ceases abruptly; more commonly there is a gradual cessation, consisting of either a progressive diminution in the amount of flow or a lengthening of the intermenstrual period. In most instances the physician is called to see the patient, not on account of the menopause, but because of some of the neuropsychiatric manifestations of this period. It has been shown that from 80 to 85 per cent of women pass through this period without interrupting their daily routine.

There are, however, certain constitutional and psychic disturbances which the majority of women experience to a greater or less extent and which become disturbing enough to from 15 to 20 per cent of the women of this age to require treatment. Menopausal disturbances are more severe in individuals with well-marked neurotic pedisposition, while women of the well-balanced type usually suffer little.

During the menopause various changes of a retrograde character take place in the various sex organs. The connective tissue in the ovaries increases with a corresponding decrease in the parenchymatous tissue. Graafian fallicles decrease and then disappear. The ovaries then undergo fatty degeneration and are replaced by fibrous tissue.

The acessory genital organs begin to undergo atrophy. There is a shrinkage of the subcutaneous tissue of the uterus, tubes and vagina.

The other glands of internal secretion also undergo changes, the character of which is not so definitely known. The thyroid gland secretion decreases and secretion of colloid character forms and displaces the parenchymatous tissue. No change is evident in the adrenal glands. There is an increase in the gland cells of the pituitary.

Great diversity of opinion exists concerning what constitutes the symptoms of the menopause. Cessation of menstruation is the only symptom on which all agree. Hot flushes are considered significant by the majority. Languor probably rates next in frequency. Symptoms commonly attributed to the menopause are headache, vertigo, palpitation, insomnia, digestive disturbance, parasthesia, neuralgia, arthritis, weight change, altered fat distribution, trend toward masculinity, impairment of memory, emotional instability, depression, melancholia, extreme irritability, agitation, apprehension, delirium, and suicidal tendency. The complete list would include nearly all the index in a textbook of medicine.

A distinction should be made between those symptoms which are direct physiologic results of the cessation of ovarian activity, and those seen in women at this period, and little, if at all, connected with the involutionary process.

There is still another group of symptoms found in women of the menopausal age which will be found to result from organic and not functional disease, and these should receive, of course, appropriate therapy aside from menopausal management. In this paper we are not concerned with the various pathological states occurring at the menopausal age.

A distinction must be drawn between the treatment of the menopausal symptoms and the management of the women passing through the menopause. Only a minority of women in the menopause need medical treatment, and a much smaller proportion require organotherapy.

Everyone of the symptoms of the menopause is directly of indirectly due to the withdrawal of the

ovarian hormone, estrone (progesterone plays only a small part in the syndrome) and the compensatory hyperactivity of the pituitary, thyroid and adrenals. Withdrawal of estrone is preceded by a short period in which estrone is secreted in excessive quantities—10 to 20 times normal. During this time the uterus is somewhat enlarged and softer than normal and hemorrhages are frequent. Later there is a precipitate drop in estrone secretion followed by a rise in the secretion of the pituitary gonadotropic hormone. Fluhman and Mayer have demonstrated an excess of the pituitary hormone in the blood and urine of nearly 80 per cent of women during the menopause amounting to 10 to 20 times the normal. This verifies the compensating hyperfunction of the pituitary during this period. However, the cycle of prolan secretion ceases at this time. The overactivity of the sex-stimulating cells is only temporary and, after a varying period of months or years, the level falls.

The ovary is dependent upon the anterior pituitary for stimulation so that suppression of the secretion of the anterior pituitary produces parenchymal degeneration of the ovary. Removal of the ovarian secretion, on the other hand, produces an increase in the number and function of the sex-stimulating cells of the anterior lobe because of the removal of the inhibiting hormone, estrone. After a varying length of time the pituitary secretion ceases, so that the ovary and pituitary are once more in equilibrium, but on a lower level.

The thyroid is stimulated by the pituitary, thyrotropic hormone which has been recovered from menopausal ovaries. It is at first over-active, then exhausted and hypoactive. Whatever manifestations of hyperthyroidism are present are due to sensitization of the autonomic nervous system occasioned by the withdrawal of estrone.

The increased thyrotropic hormone of the pituitary gland is associated with an increase also in the adrenotropic hormone of the pituitary. This hormone action on the adrenal glands results in increased adrenal function. This is thought to be the probable cause of the vasomotor symptoms of this period.

In time the nervous and psychic adjustment to the new endocrine balance is achieved, the compensatory activity of the other glands diminishes and reorientation takes place—all in a period of one to five years.

The symptoms of the menopause have no effect on morbidity or longevity except where complications occur. Most of the symptoms are self-limited and benign and yield to medical and psychiatric treatment.

Therapy in the menopause must be planned in accordance with the severity of symptoms and the glands primarily responsible. In many cases no treatment at all is necessary. Hygienic and dietetic measures are often sufficient, with, perhaps, the use of bromides and barbital derivaties. This treatment should always accompany any glandular therapy, for more lasting benefit to the patient.

During the first phase of increased estrone production, treatment with estrone is, of course, contraindicated. However, during this phase very few patients have any difficulty in adjusting themselves and only those with tendency to frequent or increased bleeding present themselves for treatment. After organic disease has been ruled out, these patients can usually be relieved by progesterone therapy. However, this period is of such short duration that therapy of any kind is usually unnecessary.

During the second, and by far the longest, part of the menopausal period—that of decreased estrone and increased pituitary secretion—treatment with estrone is indicated. Estrone exerts its influence on the symptoms of the menopause chiefly indirectly through reducing the amount of prolan A—pituitary secretion. The very fact that the action of estrone is not direct means that the length of time of administration may be an important factor.

Preparations of estrone are usually given hypodermically in gradually increasing dosage and at gradually decreasing intervals of time until relief of subjective symptoms has been obtained, after which parenteral therapy is decreased rapidly. Subsequently it is given in occasional injections only at times of greatest estrogenic depletion; later it is abandoned for a maintenance dose of an oral preparation, which is eventually stopped as the patient adjusts herself to the new endocrine equilibrium. It is possible that there is a certain dosage of estrone beyond which administration of greater amounts will not speed up the amelioration of symptoms, but anything approaching a method of standardizing dosage has not been devised. Methods of measuring the amounts of prolan A and of estrone in the blood and urine of menopausal patients are as yet too time-consuming and expensive for general use. I have only just begun the examination of vaginal smears as a means of controlling dosage and have no conclusive reports of these as yet.

The question, shall I treat the menopausal patient with estrone?, is not easy to answer. An objection is that is is prolonging the period of adjustment. There is probably a real danger that a patient partially adjusted to the hypoövarian state, treated with estrone, may with the cessation of treatment be totally unadjusted again. Until fur-

ther knowledge accrues, it is probably best to give just enough replacement therapy to alleviate, but not expel, symptoms. In the short time I have been using it, I have seen no harmful effects. However, theoretically one may expect the development of cystic mastitis or of metropathia hemorrhagica.

Zieman, in 1936, reported reactions to theëlin in oil consisting of urticara, generalized dermatitis, parotitis and anaphylactic shock.

Large tumors of the pituitary gland of rats have been produced by continued administration of large doses of estrone. In guinea pigs, rats and rabbits large cysts of mucoid type have been found in the ovaries after prolonged estrone therapy. Estrone is contraindicated in patients who have received x-ray sterilization because of cancer of the uterus, vagina or breasts. In discussing the therapy of the menopause it would be negligent to omit irradiation of the hypophysis which is practiced with enthusiasm by some clinics. However, the majority of authorities seem to agree that light irradiation of the hypophysis should be saved for those cases which do not respond to large doses of estrone within a reasonable period of time. Finally it may again be urged that organotherapy will fall far short of the desired result unless it is combined with intelligent management of each particular woman's entire menopausal syndrome.

The results I present are those of clinical observation only. No quantitative demonstrations of the estrin and prolan A content of the blood or urine, or examinations of the endometrial tissue have been made in these cases. My studies of the vaginal secretion are not complete enough to present a conclusive picture. The group includes case of both artificial and natural menopause. The average age for patients suffering symptoms of natural menopause was 42—youngest 36, oldest 51. No attempt was made to average the ages of the few suffering symptoms of artificial menopause. The symptoms occurring in this group of cases and the percentage of their incidence are as follows:

Symptoms of Menopause	*Incidence%*
1. Exhauston—tire easily	79
2. Irritability	80
3. Emotional instability	70
4. Backache	70
5. Headache, migrainoid type (?)	10
6. Insomnia	50
7. Soreness of breasts	15
8. Leg pains—sometimes joint pains	10
9. Nausea or vomiting	5
10. Cramping	30
11. Vaginal irritation	50
12. Hot flushes	80
13. Decrease or lack of sex desire	20

The group includes 36 patients, 12 of whom have been undergoing treatment during only the past four months. Of these 12, three have been able to decrease the number of injections to 2000 i.u. estrone twice monthly, six are comfortable on one injection weekly, while the other three require only one injection monthly with thyroid-ovarian tablets by mouth (t.i.d. 50 r.v. each).

Of the main group of 24 patients the average duration of case has been 18 months, the oldest cases 3½ years' duration.

Dosage has been entirely empirical, based on clinical improvement. A complete physical examination and blood Wassermann examination, complete blood count, and urinalysis were done on all patients before beginning treatment. Any pathology present was corrected as far as possible, including removal of any foci of infection. A basal metabolic test was also done, and frequently it was necessary to give small doses of thyroid with the estrone. In the beginning, it was necessary to give small doses of bromides; but these were stopped as soon as possible in order not to cause confusion as to the dosage of estrone necessary in any case.

Treatment was most often begun with an aqueous solution of estrone as I found it to give quicker results and consequently of more value in winning over the patient to this form of therapy. I gave routinely three injections of 2000 units aqueous solution estrone within the first week, preferably beginning just after cessation of the menstrual period and beginning at any time if there were no menses. This was followed by injections of 2000 units estrone in oil, three times a week, until clinical improvement was obtained. No injections were given during a menstrual period. Injections were then decreased to twice weekly, then once weekly. When the patient reached the point where she had no discomfort while taking one injection every two weeks, I gave her one of the standard preparations by mouth to take three tablets daily and one injection each month (just after the menses). After two months of this therapy she was discharged, with medicine by mouth for three weeks out of every month, resting during the menstrual week. She was expected to return every three months for check-up. By writing follow-up letters and making only a nominal charge for these visits I have been able to obtain accurate records of these women.

I have found over an interval of two years that injections have to be repeated approximately every six months—that women are quick to recognize the symptoms and to return when the medicine runs out. I have also found that these return

series of injections need only be small—never more than six, and usually four suffice. I have given these twice weekly for no particular reason. I have had no women to get prolonged benefit from oral therapy, although they undoubtedly receive some benefit and I feel that it increased the interval of time between injections.

On several occasions I have tried preparations of 1000 units, and have never found them efficacious. I feel that if a patient only needs this small amount it would be better to treat her with preparations by mouth rather than injections. Four of the 36 patients have obtained relief by oral medication alone, and these patients were previously not relieved by bromides.

Large doses of estrone, as high as 15,000 units, were tried on four occasions—given in routine manner, three times a week—and no better results were obtained than with the 2000-unit dosage. In fact these patients complained of nausea and pain at the site of injection, which never occurred with the smaller dosage. On six occasions I tried the larger dose of 15,000 units at intervals of one to two months after the patient had become adjusted, hoping for a more prolonged effect; but I noticed no difference in the interval of time between required doses.

During the interval of time that this group of patients have been treated I have tried the different standard preparations of estrone. I feel that there is no appreciable difference and that a standard preparation of estrone is necessary for treatment and not theëlin, amniotin, folliculin etc.

While there is no standard dosage possible and the statistics given leave much to be desired, I feel that this is at least a workeble basis for inaugurating and continuing estrone medication, and that quarterly check-ups should be continued until the patient has been free of symptoms without any medication for a period of six to nine months. Six of the 24 patients treated in the last 3½ years reached that point after a period of 18 months, under treatment and watchcare. They are being checked every six months, and at their last visits were feeling well 14 months to two years after cessation of treatment. The others of the group are still under supervision. Four patients are only partially relieved even by large doses of estrone over a long interval of time.

Of the main group of patients, 20 were completely relieved under treatment and six have remained relieved after treatment was stopped for 16 months to two years. Of the four who were only partially relieved, two were definitely psychotic and are now receiving estrone in addition to psychiatric treatment. The other two cases are unexplained as no organic basis for their failure to respond could be found. The remaining 12 cases have not received treatment over a long enough period to report conclusive results, but all have obtained partial relief.

The physician will not be content with diagnosing and treating ovarian failure alone. The menopause is neither psychic nor organic, but a combination of the two. At one time the organic predominates, at another the psychic. Before beginning treatment of your menopausal patient—

1. Listen to all complaints attentively and weigh them carefully.
2. Distinguish between physiologic manifestations and pathologic symptoms.
3. Treat the patient not only symptomatically, but as a whole.
4. Do not forget that delayed or late climacteric symptoms several years following cessation of menstruation are not uncommon.

The treatment of the menopause has been called one of the triumphs of female sex hormonology. Symptoms, whether due to spontaneous or artificial menopause, seen to respond equally well to estrogenic therapy. While the mechanism of the vasomotor menopause symptoms is still not clear, the immediate factor is quite certainly the cessation of ovarian function, and ovarian therapy with the now available effective preparations of estrogens is a rational procedure. The results are variable, rarely brilliant, but often satisfactory to both patient and physician.

Bibliography

1. *J.A.M.A.*, 108, p. 23
   Treatment of Menorrhagia and Metrrorhagia by Endocrine Products. BURCH *et al.*
2. *YEAR BOOK OF OBS. & GYN.*, 1936
3. *GYNECOLOGY*, GRAVES (3rd Edition)
4. *AM. J. OBS. & GYN.*, 31:5
   A Synodrome Suggestive of Estrogenic Deficiency. SCHNEIDER.
5. *ENDROCRINOLOGY IN MODERN PRACTICE.* WOLF.
6. *ENDOCRINOLOGY*, 20:1
7. *ILL. MED. J.* August, 1936.
   Estrogenic Substance is Absorbed by the Skin. ZIEMAN.
8. *THE LANCET*, May, 1936
9. *MEDICAL GYNECOLOGY.* KELLY
10. *THE CYCLOPAEDIA OF MEDICINE*
11. *J.A.M.A.* 108, p. 2
    Diagnosis and Classification of Menstrual Disorders. *idem* 1.
12. *ENDOCRINOLOGY*, 23:1
    The Menopause. WIESBADER and KURGROK.
13. *ENROCRINOLOGY*, 20:3
    Migraine and Ovarian Deficiency. GLASS.
14. *SOUTH. M. J.*, 31:3
    Treatment of the Menopause. PRATT.

(*To P.* 72)

Liver Abscess

Report of Three Cases

Wm. Francis Martin, M.D., F.A.C.S., Charlotte, North Carolina

THE occurrence of abscess of the liver is commonly associated in our thoughts with tropical climates, though according to Tearnan[6], they occur fairly commonly in the temperate and even the near-frigid parts of the world. It is said that one out of every five inhabitants of the United States has either the active amoebae or the cyst forms in his system. This suggests that temperature is a contributory factor only, and it has been shown by Craig, in support of this conclusion, that liver abscesses are three times more prevalent in the Southern than in the Northern states.

There are two main types of liver abscess, amebic and pyogenic. Roughly 75 per cent are amebic and 25 per cent pyogenic. Both may occur solitary or multiple, and amebic abscesses may become secondairy infected with pyogenic organisms especially if subject to open drainage, which for this reason is to be avoided. With both types of abscess the incidence is higher in males than females, the ratio being as high as eight to one for amebic abscesses. It is believed that alcohol and trauma are predisposing factors, which might account for the male preponderance, though this theory is not universally held.

The amoebae, which cause the formation of amebic abscesses, almost certainly enter the liver through the portal system. As with Case 1, they may elude detection in both the stools and pus. The entry of the pyogenic organisms may be by several routes:—From the organs served by the portal system, by extension from contiguous disease processes, by infection through the hepatic arteries, or, in rare cases, from trauma with introduction of microörganisms. Considering the possible sources of infection, Ochsner and DeBakey make the point[7] it is surprising that liver abscesses are not more numerous.

Appendicitis is probably the most frequent cause of infection as illustrated in Case 3. Ochsner and DeBakey suggest that when appendicitis is accompanied by chills the laparotomy should include a search for liver abscesses. It appears probable that deaths in the presence of peritonitis caused by a ruptured appendix might, on autopsy, be shown to be due to multiple pyogenic abscesses of the liver. With multiple pyogenic abscesses the prognosis is always grave, though a single pyogenic abscess may be drained, as in Case 3, with every probability of recovery.

Symptoms and Diagnosis

As the three cases show, fever, chills and sweating are symptoms of abscess formation—particularly typical of pyogenic abscesses. All three cases were typified by a pain in the upper right abdominal quadrant due to the fact that, as is more usual, the abscesses were located in the right lobe of the liver. Were they found in the left lobe, diarrhea would be a more frequent symptom, but the watery fluid becomes absorbed in passage through the left part of the cecum. Jaundice is a symptom most commonly associated with pyogenic infection, as in Case 3, but as Case 2 shows it may also be present with amebic abscess. Bile and albumin may be present in the urine.

Leukocytosis is typical of both types of abscess (without an increase in polymorphonuclear cells), and was very marked in Case 1, when the white blood count rose to 32,000; but the second case, with the highest white count only 11,800, is an interesting example of the fact that it may occasionally be much less marked with amebic abscess.

Roentgenography is an invaluable aid in diagnosis. It revealed the elevation and immobility of the diaphragm and some signs of rupture into the lungs in Case 1, and showed in Case 2 the enlargement of the liver and its lower border lower than normal.

Treatment

The treatment of amebic and single pyogenic abscess is both medical and surgical. Emetine hydrochloride and carbosone may be useful and drainage where it is indicated. Emetine hydrochloride is harmless when competently administered and can often effect a satisfactory cure when used in cases of amebic abscess. The danger of amebic abscess lies in the complications that may ensue before treatment commences, and of these rupture through the diaphragm into the lungs is most frequent. That this had occurred in the first case was established by bronchoscopy, but the presence of amoebae in neither the pus nor the stools delayed diagnosis in the presence of opinions that inclined to tuberculosis. Amoebae were ultimately found in the expectorated pus. This case was further complicated by pregnancy, but once the diagnosis was established, the abscess condition responded satisfactorily to treatment with emetine hydrochloride and carbosone.

Treatment by drainage may be imperative, as in

Case 3, when drainage was effected by the anterior abdominal route. The transabdominal, the transpleural, the retroperitoneal and the transpleural approaches all have adherents. When a single abscess is treated, as in Case 3, drainage may be done with a good prognosis.

Report of Cases

Case 1.—A white, married woman aged 25, was seen June 25th, 1935, complaining of cough, night sweats, nausea and vomiting. She gave a history of having missed a menstrual period in May. She also complained of pain in the right side of chest. Tpr. 99.4; pulse 80; res. 20. She was well developed and well nourished; a definite friction rub was heard in the right axilla and a few crepitant rales over the region of the sternum. There was slight enlargement of the uterus. The patient was sent to hospital and treated for pleurisy and nausea and vomiting of pregnancy. Saline and glucose solution was given intravenously along with supportive treatment. A large quantity of liver extract was given intramuscularly. The patient was dismissed from hospital on June 26th, tpr. normal and no complaint.

On July 27th (31 days later) the patient was readmitted complaining of productive cough, pain in right side of chest, hemoptysis, fever, nausea and vomiting. Repeated smears for tubercle bacilli were made and all reported negative. Cough, fever, hemoptysis, nausea and vomiting continued. Blood cultures were negative. Patient was given large quantities of saline and glucose intravenously and liver extract intramuscularly. Five blood transfusions were given. Repeated stool examinations for amoebae were all negative. Five ampules of emetine hydrochloride were given hypodermically, and slight improvement was shown. Consultants advising against the emetine it was discontinued. The condition growing progressively worse, a low cesarean section was performed, under local anesthesia, on September 23rd. The nausea and vomiting subsided; but the productive cough, night sweats, pain in right side of chest and fever persisting the patient was referred to Dr. V. K. Hart on Sept. 30th for diagnostic bronchoscopy.

His report Oct. 1st, is as follows:

Cocaine and morphine anesthesia, 7 mm. bronchoscope passed. Larynx and trachea normal. Two specimens of pus were aspirated from the right main bronchus. This was explored. No obstructing masses. Salmon-colored pus was coming from the lower or middle lobe. The left side was found to be entirely normal. Twenty c.c. lipiodol instilled into the right main bronchus and the patient sent to x-ray. Time 15 minutes.

Diagnosis: Suppuration of the right middle lobe.

Laboratory: Both our laboratory and Dr. Todd's report no acid-fast organisms. Dr. Todd reports culture shows streptococcus.

X-ray Report: Shows no bronchiectasis.

Oct. 4th: On review of the history and clinical findings, I think attention should be called to the following factors: 1) The pus obtained from the middle lobe, apparently, by bronchoscopy, was odorless, of the rather typical salmon-color. It was difficult to get a growth and culture showed only a scanty growth of streptococcus which could be easily a secondary factor. Repeated examinations showed no tubercle bacilli even in the bronchoscopic specimens. Moreover, it is very uncommon to have a tuberculous lesion begin in the middle lobe. 2) The chest x-ray films showed a sudden clearing of the cloudings in the lower right chest and then a sudden recurrence. This is not typical of an acute suppurative pneumonitis per se. 3) There was no antecedent factor of an anesthesia, an operation, or an attack of influenza or pneumonia, which are the common predisposing causes to an acute pulmonary suppuration. 4) The only chest condition that pregnancy would be apt to light up is latent tuberculosis. As pointed out, repeated sputum examinations were negative and there was no history of exposure. 5) Pus was obtained from the plural cavity once by Dr. McPheeters in which no organisms were found. Moreover, this was obtained posteriorly and could have no direct relationship to an infection of the middle lobe demonstrated bronchoscopically. 6) Bronchoscopy did not alter the temperature curve, which it often does. 7) What is most important is that the right diaphragm had been consistently abnormally high and had remained so despite the termination of pregnancy. 8) Moreover, the middle lobe was in direct relationship with the diaphragm anteriorly. 9) The leukocytosis had been as high as 32,000, unusually high for uncomplicated pulmonary pneumonitis. 10) The diaphragmatic pathology is apparently the only thing that could explain the history and all the bizarre clinical findings. 11) Lastly this patient was a guest at the Congress Hotel in Chicago within the last two years. I am under the impression that the epidemic of amebic dysentery among a group of visitors to the World's Fair originated at this place. In short, I think a subdiaphragmatic abscess, or a liver abscess or both, must be very seriously considered. The character of the pus to me suggests that this may be amebic. I am inclined to believe that the problem is primarily therefore a surgical one and that further bronchoscopies are contraindicated for the present. It would be altogether possible to have a fistulous

tract for a subdiaphragmatic abscess into the middle lobe.

Revised Diagnosis: Pulmonary suppuration of the right middle lobe probably secondary to subdiaphragmatic pathology.

Oct. 3rd: Laboratory findings: hgbn. 84%; w.b.c. 16,400 pmn 69; l. 21; l.m. 6; t. 4; e. none; b. none; r.b.c. 3,320,000.

Oct. 4th: Bronchoscopy.

Oct. 5th: Amoebae were found in the 24-hour specimen of sputum although the type was not definitely established.

On October 5th medical treatment for liver abscess, due to amoebae was begun. After numerous treatments of emetine hydrocloride and carbosone, the patient made a complete recovery with no return of symptoms. Repeated stool examinations have been made but amoebae were never found.

The patient was last seen by me on November 5th, 1938. On that day her hgbn. was 80%; red cells 4,500,000; whites 8,800—pmn 61; l. 29; e.2; mon. 8; b. 0. Urinalysis negative. Her condition was good, weight normal and no complaint.

The second case of amebic abscess, with amoebae present in the stools, was treated before complications had developed. It was one of those cases in which leukocytosis was negligible.

Case 2.—A white man, aged 40, was seen by me on October 8th, 1937, complaining of pain in the epigastrium and right hypochondrium, nausea, vomiting, jaundice and clay-colored stools. There was rigidity and pain on palpation over the right hypochondrium. The patient was treated medically and the jaundice disappeared; but the pain in the right hypochondrium continuing, a diagnosis of gallbladder disease was made and an operation advised.

On Oct. 15th a cholecystectomy and an appendectomy were performed. The gallbladder did not contain any stones and no stones were found in the common duct, though the walls were thickened. The appendix showed signs of subacute inflammation. A diagnosis of chronic cholecystitis and subacute appendicitis was made. The liver was enlarged and there were no areas of such appearance as to give rise to suspicion of abscess formation. The patient made an uneventful recovery and was dismissed from the hospital in ten days.

On January 14th, 1938, the patient returned with a history of the loss of 25 pounds in the past month and complaining of severe pain in the upper abdomen. There was definite rigidity and pain on palpation in the epigastrium and right hypochrondrium and slight enlargement of the liver. Tpr. was 101, pulse 90, res. 18, reds 3,850,000, hgb. 60%; whites 8,550—pmn. 67, l. 22, e. 2, mon. 9.

The next day x-ray examination was reported: With barium meal the stomach and small intestines showed no x-ray evidence of pathology. Just distal to the hepatic flexure the transverse colon shows a filling defect. After the enema has been expelled the rugal markings in the same area are interrupted. This defect is not typical of malignancy in this portion of the colon. As seen by the fluoroscope the right diaphragm is at least one inch higher than normal. The right dome of the diaphragm is smooth and on a flat film the liver shadow shows no localized areas of increased or decreased density. The lower border of the liver is smooth but is lower than normal.

Impression: The liver is larger than normal. There is a definite filling defect in the first portion of the transverse colon. Microscopic examination of the feces should be done in an effort to determine the cause of these findings.

Jan. 17th the hgb. was 60%, reds 4,350,000, whites 11,800—pmn. 69, l. 20, e. 1, mon. 10, b. 0, Blood icterus index was 3.4; van den Bergh immediate direct reaction was negative, delayed direct reaction faintly positive.

On Jan. 19th (5th day after return) the patient was admitted to the hospital for observation. Stool examination on Jan. 22nd was positive for *Entamoeba histolytica.* Emetine hydrochloride was given daily for ten doses, one capsule carbosone t.i.d. The patient was dismissed from the hospital on March 4th in good condition.

The prognosis of pyogenic abscess depends on the multiplicity of lesions. In the following case there was a single large abscess which responded to operative treatment.

Case 3.—A white man, aged 22, was admitted to the Mercy Hospital with a diagnosis of ruptured appendix on April 3rd, 1934. Examination revealed nothing definite beyond rigidity and pain over the lower portion of the right side of the abdomen, and tenderness over the lower portion of the left side of the abdomen.

A ruptured appendix was removed, the abdomen drained. On April 11th the patient began to have chills and complained of pain in the right hypochondrium and jaundice. A definite area of tenderness was found on palpating the hypochondrium. Tpr. was 103, pulse 110, res. 28. A blood transfusion was given and for the following few days slight improvement was shown. On April 23rd the patient continued to complain of pain in the right hypochondrium and jaundice was more marked. Leukocysosis was 25,000, chest examination negative.

On a diagnosis of subdiaphragmatic or liver abscess an incision was made in the right hypo-

(*To P. 75*)

An Experiment In Capitalistic Medicine*

MARY FRANCES SHUFORD, M.D., Asheville, North Carolina

THIS account of an experiment is presented as a solution of some financial and medical problems in Buncombe County, North Carolina—and wherever else a solution may be seriously undertaken.

I have formulated a plan for a Health Security Company. I have put into practice the part that I could organize myself. It has enabled me to give adequate care to people who had not had it before and at the same time I have been paid better fees.

About a year ago I started having office hours on Wednesday nights for colored people and have gradually built up a small clinic. These patients have from $200.00 to $600.00 a year each over and above their living expenses. They do not need charity, they do not expect it. They can pay for medical care if the bill isn't too large and if their money is carefully budgeted for them.

I could not start a socialistic or group scheme. My patients do not understand socialism. They are all capitalists. They understand that every fellow must pay for himself. These people, however, are not able to pay a bill that is more than a whole year's income. Hence I realize the need of continuous medical care to prevent the prolonged illness, and insurance to pay the large bill.

I have made this plan include every income group. If a finance company enables the poor man to pay bigger and better fees it will also enable the middle class man and the rich man to do the same.—My platform is the bigger the better.

In brief the plan is this—Every member pays according to his means for the medical service that is necessary to prevent prolonged illness. He is helped to do this by having a reserve fund in the savings department and being able to borrow when he needs to. He thus can pay his medical bills by easy installments.

He is insured for the prolonged or expensive illness.

He pays a small sum a year toward taking care of charity cases. Thus the cost of charity is borne by a large group and is not borne by the physician.

The objects of the corporation are as follows:

1. To promote the good health of every person.
2. To put the price within reach of all.
3. To assure the medical worker of his pay.

A. Every applicant shall have an examination which shall be adequate to place an estimate on the cost of his good health from now on. This is a sure expense.

B. Every member must have continuous medical care. This means that the member must conform to a yearly health program that has been worked out by specialists in preventive medicine. This is a yearly fee.

C. There is a certain amount of patching that almost every person is sure to need. This cost is estimated and the money put in the bank to pay for it when the time comes.

D. Every member pays at least $2.00 a year into the charity fund.

These expenses make up a Basic Fund. The amount is practically the cost of one month's illness: $500.00 should take care of this for the top price; $250.00 for the middle price; $125.00 for the lowest price; $75.00 for charity.

The individual puts in the savings department the Basic Fund—the total amount if he can afford it or in monthly payments over a period of five years. He keeps this fund built up. Any part used is replaced on the easy payment plan. This fund is returned to the individual at the age of 70 years or is used for burial expenses. It is held as security and permits small payments over a long period of time. After this fund is deposited yearly payments are made which include:

1. Cost of yearly examination.
2. Life insurance to cover cost of terminal illness.
3. Prolonged illness insurance which protects the patient against the expenses of a 2- or 3-months disability. This insurance pays for the second $500.00 or $1000.00 medical service that may be needed in a 12-months period. Or say it pays any sum up to twice the basic fund. The rates can be low because with continuous medical care the risk of a prolonged illness is minimized. Tentative rate is $5.00 or $2.50 per year according to the income scale.

All persons are investigated as to financial standing and earning capacity before they join the association. The scale of fees is determined by the person's earning capacity. There are four price lists.

1. Actual cost that must be met by county or charity.
2. Clinic practice—the fee that permits a clinic to be merely self sustaining. This fee is paid by those having an income less than $500.00 a year.
3. Private practice—the most moderate charge a doctor can make and still maintain his own establishment. This fee is paid by those whose

*Presented to the meeting of the Buncombe County (N.C.) Medical Society, Asheville, December 5th, 1938.

income is more than $500.00 and less than $1500.-00 a year, or by those who pay no income tax.

4. Regular prices which permits of a fair profit and adequate living.

Any doctor has the right to charge more or less than these fees but these prices are what the association will pay.

The capital from the Savings Department is to be used to make loans to members whose basic fund is not on deposit.

Loans are made at the rate of 6% and repaid in monthly payments.

All loans are properly secured according to banking standards:

a). By relatives
b). By property or insurance or wages
c). By employer
d). By the county
e). By the doctor or medical worker to whom the money is paid

A patient may join the association when he is sick. He may borrow the money for the necessary care if it is secured as outlined.

Each monthly payment must include a payment that goes into the Savings Department to build up that individual's basic fund. He must pay for this illness and start getting ready for the next one. If a person is unreliable the association can refuse a loan and the doctor can treat him at his own risk, or he may have to accept the care of the county.

All medical bills are paid through the association when presented.

The physician, dentist, nurse, or hospital presents an itemized statement and is paid for each item according to the scale of fees that has been agreed upon for that individual. This medical care includes—physician's and dentists' bills, cost of nursing and hospitalization, laboratory fees, and food and room during disability.

The interest from the loans pays the running expenses. Any profit from the association shall be used for medical research, medical education and for the education of the public in health matters.

This association is good enough as a business proposition for people to join voluntarily. Not a dollar is wasted. If a member is never sick his money on deposit is saved for his old age or his funeral. If he pays $5.00 a year for insurance against prolonged illness and pays for 50 years that is only $250.00—and it enables him to have a $1500.00 illness for $500.00—and that is a bargain. Also for that $5.00 he is directed toward good health and educated in the ways of preventive medicine.

Please understand that this is an idealistic plan. I haven't had enough patients or capital to start the insurance feature. What I have actually done is to make some of my patients start a savings account and pay $0.50 a week toward their Basic Fund. Then those who need immediate care and hospitalization can borrow this money and pay 6% interest. They pay it back at the rate of $1.00 or $2.00 a week. The interest pays the expense incident to this banking. I have put no capital into it. I merely make it reliable. Thus far I have not lost any money. I may lose some but it won't be as much as I'd lose if I did all this work as charity.

I present a few cases that stimulated my thinking and helped me formulate this plan.

I asked for free hospitalization for three patients this year. They were people who could not earn $100.00 in 12 months over their living expenses. Upon investigation I found that all three had carried health insurance for years.

One woman whom Dr. Huffines operated on for me had paid 25 cents a week for 25 years—$320.00—the company pays her $5.00 every week she remains in bed. In 25 years she has collected $120.-00—$200.00 less than she paid in. If that money had been saved for her as I propose she could have paid for this illness. As it was, this illness was paid for by the Asheville tax payer and Dr. Huffines. She is now able to do her own house work and the Insurance Company wishes to discontinue the five dollars a week claiming that she is not totally disabled. She came back to me, feeling that if anyone could keep her totally disabled I could. I concluded that it would be easier to start an insurance company that would treat her right than it would be to keep her totally disabled.

The point of this story is this: if the money of the poor were properly managed they could pay for themselves. Some of them are trying to do it, but there is no organization to help them. The colored people are already sold on the "Onsurance" idea and they waste thousands of dollars on it.

In our own family we had the same colored cook for 30 years. She was a grand woman and a grand cook. She died too soon. It is the memory of her and the biscuits she made that makes me wish to preserve the race. Some of them should live forever. She had no medical care that I remember until her last illness—and then we called in our family physician, Dr. Smith. He didn't think about charging for his services; we didn't think about paying him; the patient didn't think about paying him: it was the good ole Southern arrangement of charity.

The old-time darky buys what he wants and ex-

pects the white folks to give him what he needs, and Dr. Smith understood this arrangement. In this instance he was called in too late to do any good, either with or without pay. She died. We found that she had $500.00 worth of insurance for which she had paid $1000.00. She was buried in a shroud that cost $50.00 and a coffin that cost $400.00. Every bit of the $500.00 was spent on the funeral. I think if she had spent a much smaller sum for Dr. Smith's care all along she would be living yet.

This experience made me think that life insurance should be included in this finance scheme and the insurance should pass through the doctor's hands before it reaches the undertaker. Certainly we could stop such a waste and get that money for good health purposes.

There is another side to the health insurance business. After investigating some of these insurance cases, and seeing how much is paid in and how little is paid out I wondered how it happened that I wasn't in that good business myself. I said as much to one of the agents and he said, "You are welcome to the business. The companies are discontinuing the health policies because they don't pay. The colored people are all sick and the company has no way to get them well and stop the payments." Soon I saw a case that illustrated his point. The woman had collected insurance for months and was planning to collect it for years: she had a uterine fibroid tumor that was large enough to cause pressure symptoms and she was totally and honestly incapacitated. An operation would have cured her and would have cost half the amount the company had already paid her. Right then I realized that health insurance without medical care is a stupid and expensive business.

The first case I financed stimulated my thought considerably, made me think that better arrangements could be made. The patient was a Negro girl, 18 years old, who had been ill for 12 hours with acute appendicitis. She had been so ill all night she had just barely had strength enough to take a cathartic. I knew I had to hurry. She was earning $5.00 a week plus her board and room. She was from Mississippi, not entitled to Asheville charity. She had been here a week; she had saved nothing; the only thing she owned was a victrola for which she had paid $75.00. I told her there was no charity for her, that I would guarantee her hospital bill and that meant that if she didn't pay it I would have to and I told her I wasn't going to—that I would follow her to the grave for that money. Well we understood each other: she promised and I promised and I got her into the hospital. When she was operated on and I looked inside her I felt I was the most promising doctor in Asheville and I had promised too much—her appendix had ruptured and sometimes a patient with a ruptured appendix stays in the hospital for weeks and weeks and weeks at $21.00 a week, and sometimes the patient can never earn $5.00 a week again. Well right then I thought it would be a good idea to have an insurance company that would pay the part of the bill that was beyond the person's earning capacity. In this case if this woman had been so insured the company would have lost nothing. She left the hospital in 21 days. She had nothing to live on so I lent her $2.50 a week for 10 weeks. I thought if she did without food for 10 weeks she could never pay that hospital bill. She got well and got a job and paid for her medical care on the installment plan. She paid her doctors $50.00. She paid her hospital $75.00. She paid back the $25.00 I let her have for food. Last week she told me she was out of debt and ready to buy another victrola. If I hadn't financed her the city and the doctors would have paid her bill. Now she pays 50 cents a week into my Savings Department because I told her she might have to have another operation some day and she had better get ready for it. The money she puts into the Savings Department I lend to others like her.

For my clinic patients hospitalization is the biggest problem. I have had trouble getting beds for colored pay patients. It is hard for hospitals to meet their weekly payroll and carry accounts 12 months. Colored people must pay on the installment plan and the hospitals must have cash. A finance company to advance the money is a very necessary thing; otherwise all these capitalists with small capital are forced to wait for charity. In Asheville there are 15,000 Negroes—and only nine hospital beds for Negro men, nine for Negro women and three for Negro children.

I have almost gone down in defeat before such a situation. The charity cases have first claim to those 21 beds. If it had not been for that fact I would not have asked the city to take care of three cases this year.

There is a strong feeling that all the insurance and mutual credit unions should be organized to help only the poor and the middle income group. I protest against this feeling. In the first place the upper class need to have continuous medical care just the same as any other group. To preserve the health and life of the intelligent people is important for civilization and the community. In the second place this organization helps the patient pay a larger fee. In the name of common sense the doctor should help the rich to pay more. I feel that doctors need more pay and they will

never get it from those who haven't got it. It is good business to help those who have it be prepared to spend it for medical care.

Every now and then I have a white patient. There is one family I would like to tell about. The man's income is $1000.00 a month. There are seven people dependent on him. He has always paid $5.00 a call to his physician. He paid $6.00 a day for a hospital room and $6.00 a day for a private nurse. This year the medical care for his family overwhelmned him. There were three appendectomies, one case of pneumonia, two tonsillectomies and a set of false teeth. When I got around to him I found he had gastrointestinal symptoms that could or could not have meant organic disease: I couldn't tell. I suggested diagnostic expensive x-rays. He refused to buy any more. He said he thought he just had financial indigestion. He said the worst attack he had was when he got the surgeon's bill. He was afraid another bill would tie his colon in a hard knot. The roentgenologist wasn't asked to cut his fee or wait for payment: he didn't get any fee at all. I explained to the man that if he belonged to my Health Security Corporation, that isn't organized for the rich yet, he could pay the first one third of all this expense and the company would pay the next two thirds—and there would be no reduction of the doctor's fee. I asked him if he would have the x-ray examination made then. He said he would, and if luck was with him he thought he could have another baby this year too and let the company pay for that. His wife, however, objected to cheating the company that way. Women simply can't understand business. However, the case is hypothetical. As it is, two specialists will get nothing this year from him. As for myself, this beautiful personal doctor-patient relationship has developed. The nurses and hospital had to have cash; he knows that I am sweet, just like his mother, and would do anything for him; his yearly budget won't budge any more so I have to wait for my money. I'll get paid the full fee finally, but in the meantime I am thankful for my Wednesday night patients who borrow from each other and pay me cash. And furthermore, my work with this $1000.00-a-month man wasn't successful. He is still half sick; the x-rays are necessary and I am handicapped by not having them. It is important to get a $1000.00-a-month man well; much more important than getting a $20.00-a-month man well. When I work hard and cure a colored person he is still a Negro. To care for him and save expense is a municipal responsibility; but to preserve people of large earning capacity and increase their efficiency by good health is a profound municipal responsibility. Intelligent, efficient citizenry is a community's greatest asset.

To Summarize: -

I have presented a working plan for a Medical Finance Corporation. There are six main features.

1. Every member must have, and must pay for, the medical care necessary for good health.
2. If necessary he may borrow the money for this purpose.
3. He pays on the installment plan.
4. His payments are secured by a reserve fund on deposit.
5. He is insured for the cost of prolonged illness.
6. His medical bills are paid when presented.

I have demonstrated this form eases in my own experience. I am not giving this paper merely to stimulate discussion. I am in earnest about starting a Health Security Company in Asheville. So much in earnest that I have already started one. I know this plan is practicable, that it will work. All it needs for wide application is organization and the coöperation of the physicians.

I urge that it be given the serious consideration of doctors generally.

50 Orange Street.

MENOPAUSE & ESTRONE—Henderson-Smathers
(*From P.* 65)

15. *AM. J. OBS. & GYN.*, 31:5
The Menopause. WIESBADER *and* KURGROK.
Menopause, as Indicated by Vaginal Smears. PAPARICOLAON and SHOOR.
16. *ENDOCRINOLOGY*, 22:6
Clinical Indications for Anterior Pituitary-like Sex Hormone. SCHAEFFER, SHARP and LANNY.
17. *SOUTH. M. J.*, 31
Use of Progestin in Obstetrical Complications. F. H. FALLS.
18. *J.A.M.A.*, 110:Feb. 1938
The Menopause and Its Management. EMIL NOVAK.
19. *BRITISH M.J.*, 4030:April, 1938
The Female Climacteric and the Menopause. H. R. DONALD.
20. *CHINESE M. J.*, 52:Dec., 1937
Hormone Therapy in the Treatment of Disturbances of Menstruation. J. P. MAXWELL.
21. *YEAR BOOK OF OBS. & GYN.*, 1937
22. *COMPT. REND. SOC. de BIOL.*, 125:p. 634
Production of Ovarian Tumors by Folliculin. C. CHENOY.
23. *AM. J. PHYSIOL.* 121, (1938)
The Effects of Various Gonadotropic Substances Upon the Ovaries, Pituitary and Adrenals of Animals Receiving Long Term Injections of Estrin. DIAZ *et al.*
24. *MEDICAL RECORD*, 147:May 18, 1938
Suffering from the Menopause Syndrone. GEIST and MINTZ.
25. *YEAR BOOK OF OBS. & GYN.*, 1938

Clinic

Conducted By
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North Carolina

BEFORE beginning on my major subject, I wish to express appreciation to my very good friend and fellow department editor, Dr. Wingate M. Johnson, for his classic poetical dissertation on influenza. Yes, Brother, I *have* been there, a number of times. only when I had my worst attack in "sunny" France in 1918 where it rained 330 days in the year, I was too weak to go to such admirable length in my outburst. Admittedly, my effusion is inferior to yours, but it may be sung, if desired, to that plaintive air that some of the soldiers brought back from the trenches entitled, "I want to go home." Here it is:.

I suffer from flu,
I'm awfully blue,
My head it is aching,
My eyes they are red,
I cough till I almost
Go out of my head,
I'm weaker than ever before
I can't even stand on the floor,
I'm thru,
I don't know what to do,
I suffer from flu.
Selah.

A 20-year-old boy, unable to work, came to my office Jan. 2nd, 1931, complaining of intermittent pains in the back of his neck and occiput.

He stated that about 6½ years previously his right eye "began to get closed up" and wouldn't open any more. This gradually got worse for 6 months. Then he began to vomit without nausea —it was not projectile vomiting. No other gastrointestinal symptoms. He was slightly short of breath. He soon began to have severe general headaches, and his sight began to get bad in both eyes. Dr. C. W. Banner of Greensboro saw him and sent him to Dr. Charles H. Frazier, in Philadelphia, and Dr. Frazier operated on him for a brain tumor, which, judging from the scar in the left frontal region suggested a hypophysectomy via the supraorbital approach much used by Dr. Frazier. He stayed in the University of Pennsylvania Hospital for 3 months and then felt well and came home. He had x-ray treatments every 2 weeks for 4 treatments while at the University Hospital. He seemed to remain well till about 3 weeks before coming to see me, when he had a severe pain in the back of his neck and went back to Dr. Banner, who sent him back to Dr. Frazier. Dr. Frazier did a lumbar puncture on him and sent him back with a letter to Dr. Banner, saying that he found no evidence of recurrence of the tumor, and Dr. Banner so advised him, but said he feared it just the same, but could do nothing further. At the time I saw him, he was suffering much, and his head showed a tendency to fall to the left side. He shut his eyes, opened his mouth, and frowned—presenting a very peculiar facies. At times he seemed almost to fall out of his chair, leaning far to the left. At times he seemed to drop suddenly off to sleep. At times he would groan and moan. He kept twitching his feet sideways, rhythmically. Indeed, he presented a very pathetic, as well as bizarre spectacle. For a few moments, he would straighten up and look fairly normal. He looked rather younger than his given age of 20.

His past history contained two items of some interest in the light of his symptoms. He was kicked in the head by a mule in childhood. He had had an appendectomy, presumably because of his cerebral vomiting, before going to Drs. Banner and Frazier. He had never had any convulsions. He was non-alcoholic.

His parents and 1 sister were dead, causes unknown; 3 siblings were well.

There was a very marked right exophthalmos (the operation had been in the right anterior quadrant of his head), his right pupil was completely dilated and did not react to light or accommodation. The right ocular movements were decidedly limited, though the superior oblique seemed to work better than the other ocular muscles of this eye. There was also slight nystagmus in the right eye only. His left eye seemed quite normal except that its visual acuity (without glasses) was 20/30. His right eye showed bare light perception. His other cranial nerves seemed normal, and it was felt that many, if not all, the findings in his right eye could be due to the trauma of his hypophysectomy. He showed distinct pathologic somnolence, and said he had not taken any hypnotic drug recently. On the usual tests his gait and station seemed normal enough except that he looked as if he might go to sleep on his feet almost instantly. General coördination and sensation seemed good. Knee jerks present an equal, but rather sluggish. Temperature, pulse and respiration normal. He alternates between almost dropping off to sleep and crying with the pain in the back of his neck. He stated that he had lost 35 lbs. in the past 5 weeks, though his weight, when I saw him, was normal for his height and age. Physical examination was otherwise essentially negative. I communicated with Dr. Banner, who reported that Dr. Frazier had written that in his original operation he had removed an adenoma of

the pituitary, the first he had ever seen which extended forward far enough to cause 3rd nerve paralysis. Despite Dr. Frazier's failure to find evidence of recurrence, both Drs. C. W. and A. C. Banner said they felt certain that there must be some return to explain his symptoms. Incidentally, Dr. C. W. Banner said that the boy's first symptoms were those of 3rd nerve paralysis. The boy had a guardian, as he would wander about in a more or less irresponsible way, and this guardian said the boy's bowels had not moved in 5 days. He also attributed the boy's sleepiness to luminal, which he said the boy was taking right along, despite his denial thereof. He said that without the luminal, the boy just screamed all the time with the pain in his head. He was referred to Dr. Hart at Duke, who kept him under observation, and all his symptoms seemed to clear up, and we then thought all his symptoms might have been due to a luminal habit.

The following abstracts from letters as dated are of interest in this case.

From Dr. Frazier, May 22nd, 1925, to Dr. A. C. Banner in Greensboro:

"...We found the patient had a tumor of the pituitary gland which, upon operation, proved to be an adenoma. There was a lateral extension to the right to which I attributed the oculomotor paralysis.

"...We performed what we speak of as a subcapsular evacuation, inasmuch as it is not possible with any reasonable degree of safety to do a complete evacuation of the sella contents.

"The case . . . so far as the oculomotor paralysis is concerned, is unique in my experience."

From Dr. Frazier, November 28th, 1930, to Dr. A. C. Banner:

"..... .....who was under observation at the University Hospital on the following dates: 4-2-25 to 5-18-25; 7-12-25 to 7-24-25; 10-6-25 to 10-17-25; 1-25-26 to 2-7-26; and finally 11-4-30 to 11-21-30:

"On his first admission he had, as you may recall, an operation for the removal of a tumor in the pituitary body. The three admissions following were for x-ray treatments.

"He returned on his last admission, I understand, because of recurrence of headache. While he was under observation in the hospital the headaches entirely disappeared so that we disregarded them as an indication for further surgical treatment.

"On looking into the question of his ocular manifestations, I find he has only a small homonymous quadrant cut, and as to his visual acuity, his vision was 6/9 in the left eye and 6/12 in the right on his last admission, as compared with 6/22 O.D. and 6/9 O.S. on this present admission. There has been, as you see, some deterioration of vision, but the appearance of the discs is still very good and since his headaches have practically disappeared I did not want at this time to reoperate.

"I shall make it a point to ask for a follow-up report three months from today and if at that time the vision has deteriorated further and the fields are less full, I should want the patient to come back."

We did not wait three months because of the urgency of his symptoms, and his guardian preferred to send him to Duke because of its proximity.

The following is an abstract of the report from Duke:

"... we could find no definite evidence of a return of his tumor. The x-ray shows some enlargement of the sella, but this was possibly caused by the tumor before the first operation. As far as we could tell, he has had no progression of his eye symptoms recently. We had visual fields plotted on him so that we would have a record of this if he comes under observation later. Personally, I doubt if he has a recurrence and feel that many of his symptoms are psychic. In view of the serious nature of an operation in the region of the pituitary, I would advise against such procedure at the present time, but would prefer observation to see if there is any progression. (Signed by Dr. Hart.) (Dated Jan. 17th, 1931).

On May 9th, 1931, the boy's guardian told me that the boy died a few days before in Richmond. He had wandered away from home and had managed to get a ride on a gasoline truck. When within the city limits of Richmond he had a convulsive attack and was taken to a hospital. An autopsy showed a recurrence of the tumor, according to Dr. C. C. Coleman. I wrote Dr. Frazier about this, and he replied as follows:

"... I have just read with a great deal of interest your very detailed account of the symptoms and final history in the case of the patient ....

"At first as I read it, it seemed to me that probably it might have been a dual lesion. I have never seen a case of adenoma with symptoms pointing to a lesion so wide-spread as that which you recounted, and I am rather disposed to maintain this view not only from my own examination, but from the report of Dr. Hart at Duke University.

"I don't want to dispute the possibility of a cerebral lesion of smaller extent or whether the lesion which finally caused his death was a pituitary adenoma or the remains of one.

"I know you will be interested, as I will, in getting a final report and detailed account of the

post-mortem examination. I am today writing to a friend of mine in Richmond who I am sure will be able to get a photograph and pathological diagnosis. I only wish more of my medical friends would follow up cases with as much interest as you have."

Soon after this I attended a meeting of the American Medical Association in Philadelphia, and had the good fortune to meet Drs. Frazier and Coleman together, and Dr. Coleman, who said he had seen the autopsy, seemed to have no doubt it was a true recurrence of the old adenoma. Both neurosurgeons considered the case a very remarkable one.

LIVER ABSCESS—Martin

(*From P.* 68)

chondriac region in the area of maximum tenderness and a large pyogenic abscess, due to colon bacillus, was found in the liver. The abscess was drained and, on May 26th, the patient was dismissed from the hospital as cured.

References

1. Barnes, W. P., Report of case of Acute Suppurative Appendicitis Complicated by Multiple Liver Abscesses. *Virg. Med. Monthly*, 62; 511-513. 1935
2. DeBakey, M. and Ochsner, A., Diagnosis and Treatment of Amebic Hepatic Abscess. *N. O. M. & S.J.* 88; 347-352. Dec., 1935.
3. Holmes, W. H., Medical Treatment of Amebic Infection of the Liver. *S. G. & O.* 61; 521-522, Oct., 1935.
4. Joslyn, H. L., Effective Method of Treating Amebic Abscess of the Liver. *Jl. A. M. A.*, 107; 2117-2119. 1936.
5. McKensie, W. C. and Gray, H. K., Single Pyogenic Abscess of the Liver. *Proc. Staff Meeting Mayo Clinic*, 12; 596-599, Sept., 1937.
6. Ochsner, A., and DeBakey, M., Liver Abscess Part 1. *Am. Jour. Surg.*, 29; 173-194, Aug., 1935.
7. Ochsner, A., DeBakey, M., and Murray, S., Pyogenic Abscess of the Liver, Part II. *Am. Jour. Surg.*, 11; 292-314, 1938.
8. Tearnan, R. A., Multiple Liver Abscesses, *Ill. Med. Jour.*, 68; 419-425, Nov., 1935.

X-Ray Pictures Made Less Expensive

(*Penn. Gazette*, Jan.)

Reduction in the cost of taking x-ray photographs, has become a possibility as the result of experimental studies in School of Medicine of the University of Pennsylvania by Dr. Eugene P. Pendergrass, Professor of Radiology, and S. Reid Warren, instructor in the Moore School of Electrical Engineering at Pennsylvania.

They reported their findings in the Mellon Institute at the 3rd annual meeting of the Air Hygiene Foundation, which supported the research work at the University.

Most patients who have persisting biliary colic subsequent to cholecystectomy have obstruction of the common bile duct; this may have been overlooked at the time of operation on the gallbladder or may have developed subsequently.—*Waltman Walters.*

Surgical Observations

A Column Conducted by

The Staff of the Davis Hospital

Statesville, N. C.

Intertrochanteric Fractures of the Femur

One of the most distressing conditions with which doctors have to deal is an intertrochanteric fracture of the femur. In a fracture of this type, it was formerly necessary to hold the leg in abduction in order to obtain the proper relation between the shaft and the neck of the femur. In the debilitated and aged, a plaster splint of this kind is very disagreeable and greatly increases the hazards of the patient's recovery—due to the fact there is considerable confinement and limitation of motion, which limitation makes the patient more succeptible to all kinds of complications, especially grave pulmonary and cardiorenal conditions.

The usefulness of a Smith-Petersen nail in this type of fracture alone establishes this devise as a valuable addition to our armamentarium. This, however, still leaves us with a patient to put up in a plaster splint. The use of a Smith-Petersen nail, with additional support to maintain the proper angle between the shaft and the neck of the femur, solves the problem and, in the method illustrated, we have an excellent combination of internal splints for this purpose.

This method makes use of the Smith-Petersen nail in the usual way, with the addition of the application of the one end fastening to the end of the Smith-Petersen nail with a screw, making a powerful joint, able to withstand any amount of strain which is to be anticipated. The lower end of the vertical splint is fastened to the shaft of the femur with vitallium screws. If there is much danger of great strain being thrown upon this fracture, it is advisable to reinforce the hold of the screws by applying a Parham band. This will hold the splint close to the bone and will prevent pulling out of the screws. Vitallium screws hold very well and, as a rule, do not become loose. However, the use of the Parham band is a double protection.

The results in the treatment of cases of this kind are usually very good. In the aged the time of healing, of course, is longer than in younger people, but the results have been so uniformly good that we do not hesitate to use this method in almost any case where additional support is required to supplement the holding action of the nail.

The use of vitallium throughout would simplify the entire procedure, and lessen the irritation to the tissues and to the bony structures. However, we have had no trouble at all with the method outlined.

Before applying a vertical splint, it is necessary

to insert the Smith-Petersen nail far enough so that it will hold well. The nail should be of such length that it may be driven to within one-third of an inch of the surface of the head of the femur. The splint should be left on until healing is complete and the patient can get around without difficulty. It is, of course, advisable to remove the vertical splint as soon as it can be dispensed with safely; but this should not be done until x-ray examination shows good union,

With a splint of this kind properly applied the patient may be allowed to sit up in bed the day after operation the same as after an intracapsular fracture of the neck of the femur treated by the Smith-Petersen nail.

Gas Gangrene Following Therapeutic Injections

Harney of Philadelphia, in a recent issue of *Annals of Surgery*, reviews a number of cases of gas gangrene following therapeutic injections of various kinds.

I have seen in outside consultation, two cases of this kind. In both instances the patient had a gas-bacillus infection of the arm extending up to the chest, and both resulted fatally.

One patient had been suffering from hemorrhoids; and it was our opinion that his hands had become contaminated and in some way he had transferred the organisms to the arm and when the hypodermic was given this carried the infection down into the tissues, which resulted in an infection that progressed rapidly and extended with amazing rapidity.

Harney mentions the fact that injections given in the hip regions are more likely to be followed by gas gangrene than are injections in the arm. This would be natural, as the chances of contamination of the lower part of the body would be greater than of the upper.

Every hypodermic injection in any part of the body should be given with the greatest care and caution. While the development of an infection of this kind is rare, it does happen, and no precaution is too great where a patient's life is involved. According to Harney, only one such case has been reported in American medical literature. This case was reported by Tenopyr and Schafiroff in the *Journal of the A.M.A.*, 1936.

Selection of Donors for Blood Transfusions

Donors for blood transfusions should always be selected with the greatest care. In the vast majority of cases, there is sufficient time for not only a careful physical examination of the donor but for a Kahn or Wassermann test, and careful typing and cross-matching of the bloods. For a rapid test for syphilis, the Ide test has proven very accurate. In emergencies this test is always available and may be made in a well organized laboratory in a few minutes. In fact, the test can be completed by the time the typing and cross-agglutination are finished.

A fluoroscopic examination of the lungs of a donor should be done, when there is plenty of time, to detect any evidence of tuberculosis.

While, as a rule, a donor who is used once without any reaction may be used repeatedly, yet it is always safest to cross-check before each transfusion. Severe reactions may be prevented by this precaution.

The technic of blood transfusions should always be carried out with the most meticulous care.

A Specific Chemical Agent for the Treatment of Pneumonia

Sulph-Pyridine, or No. 693, is being used for the treatment of pneumonia, and excellent results reported. We sincerely hope this will be a specific for pneumonia. At the present time, however, the best treatment for pneumonia is a combination of x-ray treatment over the lungs and the administration of the proper serum for whatever type of organism is causing the pneumonia.

Saint Joseph's Hospital

(*Bulletin Buncombe Co. Med. Soc.*, Jan.)

Asheville welcomes a new hospital to its list of general hospitals. On or about the 15th of January the institution formerly known as Saint Joseph's Sanitarium will be formally opened to receive medical and surgical patients. There are four stories to the edifice, the top two reserved for the care of tuberculous patients; the lower two to be used for medical and surgical patients. For the present, obstetrical patients will not be received. All local physicians are granted the privilege of caring for patients at the hospital.

We are informed that the following rates will prevail: 3-bed rooms, $2.50 per day; 2-bed rooms, $3.00 per day; corner rooms with two beds, $4.50 per day; private rooms with bath, $5.00 per day. The hospital will have 96 beds for patients.

The original Saint Joseph's Sanitarium was located on North French Broad Avenue, being founded in 1900. The present building at 428 Biltmore Avenue, was erected in 1909 and enlarged in 1916. The administration building was completed in 1924. Sister Scholastica was the superintendent of the institution until her death in 1937. Sister Elizabeth is now in charge of the hospital.

When we consider the extreme instability of parts of our body structure, their readiness for disturbance when only slight external forces are applied, and their rapid deterioration in the absence of favoring conditions, the persistence of the normal state and normal activity through many decades seem nothing short of miraculous.—*Cannon.*

Peptic ulcer of the Esophagus.—Seven cases of this condition, 3 of them in persons with diphragmatic hernia, are reported in the current issue of *The Am. Jl. of Digestive Diseases.*

DEPARTMENTS

HUMAN BEHAVIOR

James K. Hall, M.D., *Editor*, Richmond, Va.

The Texas Squeal

The unorthodox behaviour of The Honourable W. Lee O'Daniel, recently inaugurated as Governor of Texas, continues to arouse his conservative constituents. Sometime ago Winsell Williams, a Negro, made the mistake of killing a white man. Winsell was sentenced to death. But Governor O'Daniel has recently reprieved the sentence for thirty days in order that the wretched man may have the opportunity to suffer as much as possible during that time. Many of the Texans are violently criticizing their new Governor for his fiendish cruelty. They berate him for subjecting the Negro to the ordeal of thirty days more torture.

I surmise they may be misinterpreting the motives of Governor O'Daniel. They charge him with cruelty. He may be merely trying to educate the Texans. The Governor does not believe in capital punishment. He knows the actual infliction of death is not punitive because it is not painful. Hanging is probably briefly painful; but death by decapitation, by shooting and by electrocution is probably painless. I doubt not that death in the toxic gas chamber may be as painful to the condemned man as it appears to the spectators to be.

The prisoner condemned to death suffers before the hour of execution. The pain arises out of contemplation of the impending and unavoidable personal tragedy. The suffering must be continuous from the moment of the pronouncement of sentence until consciousness is lost in the death process. In prolonging the death-agony of Winsell Williams the Governor of Texas is also causing his constituents—many of them—also to suffer. They should be made to suffer, and as much as possible. The infliction of death upon a citizen by society as punishment for discursive behaviour is barbaric, and there should be no mitigation of the barbarism. The more keenly the people can be made to realize how more than bestial capital punishment is the more they will suffer and the more likely they will be to abolish that disgraceful legal procedure.

Legalized executions should be publicised as fully as possible. They should be staged on the capitol square, at the Fair Ground, or on a great athletic field. The people should be encouraged to witness the executions. And, for the instruction of those who are unavoidably kept from the executions, the press should carry a detailed description of the prisoner's exit-conduct. No state should be permitted barbarously to do to death a citizen in a half-basement, small room, from which the public are excluded. The people should be informed by their own eyes how barbaric in its final effect upon the prisoner the capital-punishment act is. I sympathize with Winsell Williams in his dire extremity, but I commend Governor O'Daniel for the tutelage he is giving the citizens of Texas.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Newer Methods of Treating Certain Types of Acute Infection

The year 1939 opens with much confusion in the minds of most physicians as to the relative efficacy of several of the newer therapeutic agents that have been so generally and so enthusiastically advocated for the treatment of certain kinds of acute infection. Developments in biological, in chemical, and in radiation treatment have given us a host of remedies whose therapeutic effect is not yet fully known. The indiscriminate use of these is apt to be more harmful than helpful to the patient. As is true of endocrinology, here we should be cautious in the use of new methods until there has been proper evaluation by clinical experience. The continued administration of one or more endocrine products for indefinite menstrual complaints in nervous women is a too common practice. A word of assurance and a harmless bread pill are superior to hormones in the treatment of hysteria.

At the 1938 meeting of the Southern Surgical Association, a speaker advocating deep x-ray treatment for gas-bacillus infection was almost floored in the discussion by the announcement that a series of cases had just been reported at a meeting of the Western Surgical Association in which x-ray treatment had been found worthless.

All agree that x-rays are of value in the diagnosis. Gas in the tissues can be so shown long before detection by palpation is possible. Kelly of Omaha advocates the early treatment of gas gangrene infection by x-rays, claiming 100% recovery for cases treated thus within 24 hours of onset. He says severe debridement is not justifiable nor is amputation of limbs necessary if proper and conservative x-ray treatment be given.

No doubt the best treatment is the prophylactic giving of antitoxin at the time of injury, followed by debridement with postoperative injections of Dakin solution. When the disease has developed, radiation and massive doses of antitoxin should be given before amputation is considered. Good results have also been reported from the administration of sulfanilamide.

Satisfactory treatment for cellulitis of the face has not been found. Surgery is positively contra-

indicated. Hot applications of magnesium sulphate solution are soothing but not curative. Vaccines and serums in our hands have proven useless. If there is confirmation of the claim that radiation in repeated extremely small doses overcomes infecting organisms without lowering the vitality and the resistance of the tissues it should prove to be a useful therapeutic agent. Given intravenously neoarsphenamine is said to have a definite bactericidal effect on Gram-positive cocci (staphylococci and streptococci). Radiologists advise the treatment of carbuncles by the method outlined above. There is early relief from absorption as resolution begins. By it the danger of operation upon the toxic patient is avoided and healing occurs with but little scarring.

With us the first consideration in the treatment of a carbuncle is a uranalysis and a determination of the patient's blood sugar. If diabetes is present, to prevent coma insulin should be given by a competent internist. We think excision of the grossly infected tissue through a crucial incision is the only effective treatment for a massive carbuncle.

Lack of space prevents discussion of Ludwig's angina and the erysipeloid infections.

In conclusion, we express the hope that we are on the eve of a new day in the treatment of this type of infection. The pendulum has swung far in approving a greatly enlarged field of usefulness for both radiation and sulfanilamide. No doubt there will be a reactionary swing in the opposite direction before an accurate determination of indications and contraindications can be made on the basis of experience.

References

Editorial—Gas Gangrene, *J.A.M.A.* .December 10, 1938.

X-ray Treatment of Gas Gangrene—James F. Kelly, et al, *Radiology,* November, 1938.

OBSTETRICS

Ivan Marriott Procter, M.D., F.A.C.S., *Editor*
Department of Obstetrics and Gynecology
Mary Elizabeth Hospital

The Third Stage

Probably more women die from accidents of the third state of labor than from the first and second combined. This fact alone gives the third an importance second to that of no other stage. Rigid attention and technique should never be relaxed until the placenta and membranes have been delivered, the uterus well contracted and the perineum repaired.

Asepsis is just as important in the conduct of the third stage as it is in the second. From our observations of the immediate separation of the placenta many times at cesarean sections, we feel that Frankl's explanation has most to substantiate it. Using the x-ray studies of Weibel and Warnekros, he concluded that loosening is affected by the escaping blood due to a rupture of the overdistended blood vessels in the spongiosa septa. The vessels rupture when an excessive amount of blood suddenly flows into the uterine wall as soon as the fetus is expelled. Except for the observation of quick separation at cesarean section, it would be easy to accept the theory of diminution in area of the placental site, since this requires 15 or 20 minutes for necessary contractions, and that amount of time usually expires between the birth of the baby and localization of the placenta in the lower uterine segment. The separated placenta is recognized by:

1. Flattening of the corpus uteri from before backward
2. The cord advancing 5 to 10 cm.
3. A spurt of blood which ceases as the uterus contracts
4. Uterus rising in the abdomen
5. Appearance of a soft, boggy, mass (placenta) above the symphysis (Beck)

We believe the placenta will separate spontaneously quicker and more completely if not disturbed in its mechanism by kneading, steadying or holding the fundus; and that these manipulations are never called for in the absence of hemorrhage.

Sepsis is invited by intrauterine manipulation; also by energetic application of the Crede treatment early or late, but more especially early when pieces of placenta or membranes may be torn off from the afterbirth.

Retained placenta without hemorrhage should be treated expectantly. After separation, if it is not expelled by uterine contractions, assisted by gentle Crede manipulation and downward pressure in the line of the pelvic canal. anesthetize the patient and repeat. We have several times allowed the patient to go two hours or longer for spontaneous expulsion. Partial separation may be accompanied by more or less severe bleeding, and in this case aseptic invasion of the uterus to complete separation and removal is justifiable and indicated.

A rare condition is found (Polak's figures 1 in 6000) in which no line of cleavage between placenta and myometrium can be found. "The condition is called placenta accreta and is due to the erosive action of the trophoblasts on the uterine muscle in the absence of the descidua basalis" (Schumann). Under such circumstances, the removal of the placenta would entail digging it out piecemeal, with the attendant danger of uncontrollable hemorrhage and infection.

Finding such action necessary, the physician would immediately cease and prepare his patient

for supravaginal hysterectomy. We have had two such experiences: On December 17th, 1920, a white woman, aged 26, para 1, breech delivery, third stage, one hour; no sign of separation. The uterus was explored and manual removal attempted and effected piecemeal. Bleeding was not excessive. There was a foul discharge and fever for 6 days. Hysterectomy was performed and recovery ensued. The operation should have been performed at once.

On July 3rd, 1932, para 9, a colored woman, third stage, 2 hours, no separation. Explored, attempted piecemeal removal by physician at home—unsuccessful. Supravaginal hysterectomy was followed by recovery.

The Mary Elizabeth Hospital routine management consists of:

1. Repair pedineum while placenta is separating
2. Rigid asepsis
3. Leave to Nature until placenta separates (unless bleeding)
4. When separated (signs given above) express by combined gentle Crede and pressure in axis of pelvis canal
5. If moderate bleeding (before placenta delivered) gentle massage to stimulation contraction
6. If bleeding continues and becomes excessive, insert the sterile, freshly-gloved hand into uterus and deliver placenta, massage uterus, give pituitrin intramuscularly. If bleeding is not controlled, give orgotrate intravenously (using boiled syringe). If bleeding not controlled, pack the uterine cavity with especially prepared sterile gauze. This may cause shock, but saving blood saves life.

In placenta praevia, the watchword is "save blood" *before, during and after* labor. Always pack the uterus and vagina after the third stage. Remember that prolonged labor, operative obstetrics, analgesia and anesthesia invite relaxation of the uterus and bleeding.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

The Georgia Pediatric Meeting

The Scientific Session of the Georgia Pediatric Society, as is the custom, eclipsed all other annual Southern Pediatric Meetings. This year the meetings, afternoon and evening, were held at the Forest Hills Hotel in Augusta on January 12th. The Georgia Pediatricians are masters in the art of entertaining.

The afternoon program consisted of three panel discussions led by Drs. Chas. Hendee Smith of New York, Alexis F. Hartmann of St. Louis, and Thos. B. Cooley of Detroit, and their assistants. Dr. Smith spoke on The Diet of Infants and Young Children, Dr. Hartmann on Nephritis, Dr. Cooley on Anemias of Infancy. The sessions held in the evening were by the same speakers. Dr. Cooley spoke on Constitutional Anemias of Childhood, Dr. Hartmann on Some Physiological Effects of Sulfanilamide, Dr. Smith on Pneumonia. The last paper was not heard by this editor.

Dr. Smith urged less food for the infant and showed by chart that the newborn baby thrives well on fewer calories than are supplied them by the usual formulas. "If they do well on less, why give so much that an intestinal upset may follow from overfeeding." He believes that 45 calories are adequate for most babies. The newborn baby starts to gain weight on as little as 25 calories per pound. It is not necessary to give premature babies a high-caloric feeding; they require about the same formula as a full-term baby. Dr. Smith also believes that after the first year of life no more than 1½ pt. of milk should be given to the child each day. Too much milk frequently impairs the appetite.

Dr. Cooley gave some valuable points in the management of anemia Iron is indicated in all anemias. Iron will not give a normal hemoglobin if the total red count is not within normal limits. A considerable portion of iron ingested is lost in the stool. Today the popular form of iron is ferrous sulphate. Dr. Cooley says there is very little difference in value of ferrous and ferric salts of iron. The addition of copper to iron helped in overcoming anemia in rats, but it is not of proven value for the anemia of human beings. There is a trace of copper in all crude iron salts. Liver may be added with beneficial results in certain types of anemia. Where the red cell count is low liver is indicated, since liver seems to stimulate the production of red blood corpuscles. He urges the use of extracts of whole liver. Iron and liver alone are not sufficient to overcome anemias; good diet, fresh air, sunshine and good hygiene are also necessary. Bone-marrow may do some good in anemia where the red cell count is low; however, he does not consider it of any great value. He holds the same for spleen preparations. The intramuscular use of liver, ½ to 1 ampule once or twice a week is the proper method of administration.

Dr. Hartmann said that an alkali with sulfanilamide is contraindicated. The declaration that there is an acidosis in sulfanilamide-treated patients has been shown to be erroneus. Instead, there exists a mild degree of alkaosis. The cyanosis of sulfanilamide therapy is due to met- or sulfhemoglobin, and is not a dangerous sign in itself.

The important thing is to be certain that the cyanosis is not a sign of pulmonary or cardiac disturbance. How to be certain of this? To give an ether or other cyanosis-producing anesthetic to a patient already cyanosed by sulphanilamide becomes a difficult problem for the anesthetist. If the cyanosis is due to sulphanilamide it can be cleared in 30 minutes by methylene blue, 1.5 mgm per kilo body weight in the vein. The drug, 1 grain with each dose of sulfanilamide, orally prevents cyanosis in children under four years of age; 2 gr. are required for those over four years of age.

By graphic charts, Dr. Hartmann, showed some of the spectacular results obtained by the use of a new pyridine sulfanilamide commonly referred to as T 693. This product, not yet on the market, is indicated in pneumococcic and staphylococcic infections and it promises much against *Streptococcus viridans*. The temperature returns to normal almost immediately following the administration of the drug. It, too, produces cyanosis and may cause a dangerous reduction in the number of white blood cells. Some annoying disturbances of the central nervous system have been observed. The drug is being given in doses, "A little less than 0.1 Gm. per kilo body weight per day for children." Dr. Hartmann seemed conservatively optimistic over the splendid results from this drug in properly selected cases, following a short period of observation.

UROLOGY

For this issue P. G. Fox, M. D., Raleigh, N. C.

Treatment of Acute Specific Epididymitis

Epididymitis is a rather frequent complication of gonococcal infection of the urinary tract; one that gives the patient and the physician a great deal of concern. Since the use of salfanilamide, we have not seen this complication so frequently—and I think because when sulfanilamide is used infection is overcome more rapidly and because we are now using less urethral injections. The best treatment is prevention by a minimum of trauma and instrumentation, but with all our precautions we still have some patients develop epididymitis.

Treatment can be said to be medical and surgical. In either case the first thing is to stop all local treatments—irrigations, injections, prostatic massages. It is best to put the patient to bed and elevate the scrotum and its contents as high on the abdomen as possible. This can be done very easily by the use of a jock-strap, protecting the scrotum with cotton. Ice should be applied on the affected side and kept there continuously. In my experience, ice relieves pain better than heat, although there are some cases that do not respond to the former that will respond to the latter. The patient should have proper elimination from the intestinal tract, a nourishing, but bland, diet, urinary antiseptics, forced fluids and daily injections of milk protein. Calcium gluconate is used intravenously. It may be necessary at times to give small doses of codeine to relieve the pain. The patient is placed on rather large doses of sulfanilamide; but the sulfanilamide content of the blood should be determined daily, and kept within normal limits. Some patients are unable to go to bed. In these cases, we try to follow the outline given above as closely as possible but do not give as large doses of sulfanilamide. The patient should be instructed not to go beyond the very gentle in exercise.

The majority of patients will respond to medical treatment, but there are chances of recurrence of epididymitis when active treatment for the urethritis is resumed. If our patients show no improvement under this treatment within five days, we advise surgical measures. I have been informed that the surgeons of the Navy resort to surgery as soon as a case of epididymitis develops. Their experience has been that the patient loses less time than if medical treatment were resorted to. I have had but one recurrence following surgery. It is a frequent condition following medical treatment.

Almost without exception, with the epididymitis there is some involvement of the prostate and seminal vesicles on the affected side. Therefore, when we resort to surgery, we try to do as much for the patient as possible at that time. Under general or spinal anesthesia, an incision is made rather high in the scrotum. When tunica vaginalis is opened the epididymis is found markedly inflamed and enlarged. The capsule is split and stripped back (decapsulation of the epididymis). One is then able to see minute abscesses in the epididymis, which are punctured and then swabbed with 1% mercurochrome. The vas deferens is located and a vaso-puncture is done, injecting 3 to 10 c.c. of 1% mercurochrome solution. In this way, we are able to correct some of the trouble in the seminal vesicles. A rubber-tissue drain is placed down to the epididymis, the wound closed and a spica dressing is applied. A spinal puncture needle is inserted into the prostate, through the perineum, and 1% mercurochrome injected into the prostate gland (following Grant's technique).

As a rule, these patients are relieved of pain immediately following the operation and the convalescence is rapid. The drain is removed in 48 hours and the patient discharged from the hospital on the 5th day. Of course, a well fitted support

is worn. These patients are generally back to their regular duties the seventh day.

In another week we begin treatment of the prostate and seminal vesicles for any infection that may remain. However, if the patient had been treated medically, we generally wait from two to three weeks following the onset, before resuming active treatment for the infection of the posterior urethra, prostate and seminal vesicles. We are very careful and gentle in our proceedure or a flare-up of the epididymitis will occur.

GENERAL PRACTICE

WINGATE M. JOHNSON, M.D., *Editor*, Winston-Salem, N. C.

DR. HAVEN EMERSON OPPOSES COMPULSORY HEALTH INSURANCE

IN spite of the fact that the American Medical Association has just been indicted under the Sherman Anti-Trust Act, there are various indications that the tide of sentiment for the federalization of the medical profession is not running so high as it was a few months ago. One of the most encouraging messages that has appeared in some time is the address on November 18th to the annual meeting of the New Jersey Health and Sanitary Association, by Dr. Haven Emerson, Professor of Public Health Administration at Columbia University.

In this address Dr. Emerson takes vigorous issue with the findings and proposed program of the National Health Conference held in Washington last summer. He began by attacking the findings of the so-called National Health Survey, which he says "was nothing of the kind, but merely a drag-net hunt for chronic sickness, which was, of course, found in considerable amount. Also, that which was publicised as a National Health Conference was not a conference at all but a sounding-board before which a hand-picked, and certainly in the main a pre-convinced, group of invited guests listened to the report of a technical committee, with . . . no opportunity for collective consideration or adoption of the slightest change in the readymade proposals which they were assembled to endorse."

Dr. Emerson states that four national bodies—of physicians, of hospital administrators, of health officers, and of dentists—have met since this Health Conference and "arrived at surprisingly uniform points of view on the five proposals of the officials of the federal government . . . Three of the four professional bodies expressed frank opposition to compulsory insurance to meet the cost of medical care of sickness, what is generally and always erroneously called health insurance. The fourth, the American Public Health Association, did not endorse this and by ignoring it presumably expressed its disapproval."

Dr. Emerson's language is so clear and vigorous that it would lose by paraphrasing: hence, at the risk of having this department criticised as a scissors-and-paste affair, I want to give a few quotations from this address.

"To describe the present state of the public health services of our country as grossly inadequate is a mischievous untruth and expresses an emotional unbalance in the thoughts and experience of the technical committee members, unworthy of persons trusted with national statesmanship.

"We are now in fact the possessors of better general health, are less afflicted with disease known to be preventable, are more secure in the survival and growth of our offspring to maturity, and have an average expectancy of life greater than that of any population group in the history of man, comparable in size, variety of races, and distribution in age, occupation, economic and climatic conditions. Never before in this or any other continent have any 130,000,000 people recorded such low death rates as will be reported in the United States for the year 1938, for all causes, for tuberculosis, typhoid, diphtheria, and infant mortality. Not in our time has maternal mortality been so low, or the death rate from pneumonia.

"And yet the arm chair pundits in Washington tell the people of the United States that our public health services are grossly inadequate. Of course this language is used to develop dissatisfaction with the present so that people will tolerate taxation in the future."

"It may be remarked in passing that no system of payment for medical care of the indigent sick so far proposed or put into effect will equal in its cost to the taxpayers what the physicians in practically every county of the United States have been giving at the most modest schedule of charges, freely, year in and year out, at their offices and in the wards and out-patient services of hospitals and other similar institutions. What the medical profession is primarily concerned with is that the community accept the burden of cost which their own wealthy patients and private philanthropy can no longer carry."

"That some people who need medical attention do not receive it will always be true, as it is today, but the reasons for this are not largely, if at all, due to the inability of these sick to pay for the cost of necessary treatment, but chiefly result from ignorance, superstition and misinformation growing out of religious beliefs and faith in the promotion of advertised medicaments. That anything like one-third of the sick now lack medical care or

even that a larger proportion of the population are hindered from gainful employment by preventable and remediable but uncared-for disease, as the peroration of the technical committee would try to persuade us with statistics and emotional publicity, is just so far from the truth that it will be forgotten by the public and by the physicians of this country who know it is not so."

"It would be nearer the truth to say that catastrophic economic disorder and resultant disadvantages to the wage-earner are the causes of some illness, than that neglected sickness is the main factor in any substantial amount of unemployment. Nay! I would go further and suggest that probably one of the largest factors other than the world-wide breakdown of international commerce and the discrepancy between the technological increase in the capacity of industry to produce and the purchasing ability of the consumer, is that sanitation and public health have saved lives and prolonged them beyond the years of optimum employment, faster than industry has been able to expand its payroll."

"Usually in American life, prestige, public concern, publicity and political influence go where most public money is spent and the largest number of public employees are engaged. We can rest assured that money will be always appropriated for the care of the sick. The sick must be served. It has taken some generations of effort in education and demonstration to teach our communities that investment in health is a proper object of public expenditure. The public knows that the health officer can prevent some diseases. What the public does not know, and what it seems to me many members of the American Public Health Association have not learned, is that few if any of even our best qualified health administrators, whether medical or lay, are qualified for responsibility of supervision of standards of quality in the clinical practice of curative medicine."

"We must expect, on the experience of other countries, that, if government actually operates on any compulsory insurance scheme, a considerable amount of the services for the sick among people at low-income levels, the cost of medical care of these people will be largely increased, perhaps doubled, by the cost of administration!

"We have good reason also to suspect that the quality of care will deteriorate, and that the amount and duration of complaints of illness and the amount of medicaments used will all markedly increase."

"It is as much the duty of the medical profession to warn the public against extravagant and utopian schemes of all-inclusive commercial or governmental provision of medical care with their inevitable inferiorities as it is to assure a constantly improved standard of personal services to the sick on the basis of private economic and professional relationship."

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., F.A.C.S., *Editor*
Asheville, N. C.

HYPERTENSION

THE enormous mass of literature on the subject, continues to interest and to fascinate, probably for three reasons: first, its ubiquity; second, its nebulous etiology; and third, its unsatisfactory therapy. It is a far cry from Richard Bright to Harry Goldblatt, and much water has run under the bridge in the hundred years that have elapsed, but it may still be said of hypertension, as Tennyson heard his brook say:

"Men may come and men may go,
But I go on forever."

Dr. R. W. Scott, of Cleveland, in *The Journal of the American Medical Association* for December 31st, reviews some of the literature, beginning with Bright's article in Guy's Hospital Reports for 1836. Dr. Scott says:

"One hundred and two years ago Richard Bright first published his observations on the frequent coexistence of thickening of the arteries, cardiac hypertrophy and chronic renal disease. Finding no organic cause for the cardiac hypertrophy generally affecting the left ventricle, he said: 'This naturally leads us to look for some less local cause, for the unusual efforts to which the heart has been impelled; and the two most ready solutions appear to be either that the altered quality of the blood affords irregular and unwanted stimulus to the organ immediately; or, that it so affects the minute and capillary circulation, as to render greater action necessary to force the blood through the distant subdivisions of the vascular system.'

Under the latter postulate Bright ascribed cardiac hypertrophy to increased peripheral resistance, which he believed was due to renal disease. It may, therefore, be said that he was the first to consider the renal origin of hypertension."

Gull and Sutton believe that the renal change in chronic Bright's disease with contracted kidneys, when present, is a part of a general morbid condition.

"Up to the turn of the century there were three schools of thought concerning the interrelation of hypertension, arteriosclerosis and renal disease: (1) the followers of Bright, who believed that hypertension was due primarily to renal disease, (2) the followers of Gull and Sutton, who ascribed hypertension to wide-spread vascular disease and regarded the renal lesions as purely secondary, and (3) those who believed with Allbutt that hypertension was due to generalized vasoconstriction unrelated to renal disease.

A great advance in this field was made in 1904 by Jores, who recognized two types of contraction of the kidneys.

inflammatory and arteriosclerotic, and thus supplied the anatomic basis on which the clinician might distinguish nephritic hypertension. There remained, however, a much larger group of hypertensive patients in whom renal insufficiency rarely developed but who died of heart failure or a cerebral accident. Cases of this kind have been studied by many careful observers ever since the introduction of the sphygmomanometer into clinical medicine; they have been the source of much speculation as to the connection between arteriosclerosis, hypertension and renal disease—a controversy that has come down to the present time."

In 1914, Volhard and Fahr demonstrated that the kidneys of patients with essential hypertension were scarred as a result of more or less diffuse sclerosis of the smaller renal arteries, and the term nephrosclerosis was introduced to describe the condition. There wos still, however, no uniformity of opinion regarding the relation of the kidney to hypertension, and many modern authors have come to the conclusion that the kidney is in no sense concerned with essential hypertension. To quote Fishburg:

"Essential hypertension is merely a collective concept for a number of conditions having in common the positive characteristics of arterial hypertension and the negative one of absence of primary renal disease, and regarding the pathogenesis of arterial hypertension he said: 'Hypertension, like fever, is merely a symptom and not a disease; sometimes hypertension is produced by renal disease, but more often it is not.'

Dr. Scott summarizes present-day concepts of clinical hypertension as follows:

"1. Hypertension of renal origin associated with obstruction of the urinary passages, glomerular nephritis, multiple cysts of the kidneys, periarteritis nodosa with marked renal involvement and severe renal amyloidosis. With clear evidence of renal disease in such cases, the renal origin of the hypertension is accepted by most, although some have denied that hypertension is ever caused by renal disease.

2. Essential hypertension is generally regarded as nonrenal in origin because (a) the systemic blood pressure is elevated in many cases for years before there is any demonstrable impairment of renal excretory function, (b) most patients with hypertension never show renal insufficiency, (c) occasionally a patient with hypertension shows no anatomic evidence of renal arteriolar disease."

In 1928 Harry Goldblatt began his series of experiments designed to gradually impair the blood supply to the kidneys in order to see what effect this would have on blood pressure:

"He constricted the main renal artery by a clamp so designed that any degree of narrowing up to complete occlusion could be produced. He has shown that constriction of the renal artery of one kidney in both the dog and the monkey causes an elevation in the systolic and diastolic pressures which lasts for weeks or months, whereas narrowing of both renal arteries at once or after an interval results in persistent hypertension, which has continued in some animals for six years. The elevated blood pressure following the constriction of one renal artery promptly returns to normal on either removal of the ischemic kidney or release of the clamp on the artery—a crucial experiment illustrating the role of the kidney in raising blood pressure."

As a result of these experiments, the argument that essential hypertension can not originate from the kidney because there is often no accompanying impairment of renal excretory function is shown to be invalid.

Dr. Scott gives the following table, which is self-explanatory:

CLINICAL HYPERTENSION

Renal

1. Essential hypertension
2. Primary renal disease
   - (a) Glomerular nephritis (acute and chronic)
   - (b) Pyelonephritis
   - (c) Urinary obstruction
   - (d) Periarteritis nodosa of renal vessels
   - (e) Polycystic renal disease
   - (f) Severe amyloidosis of kidney
3. Coarctation of the aorta (?)
4. Eclampsia (?)

Nonrenal

1. Endocrine disturbances
   - (a) Basophilic adenoma of the pituitary
   - (b) Adrenal tumor
   - (c) Hyperthyroidism
   - (d) Menopause
   - (e) Obesity
2. Vasomotor disorders
   - (a) Increased intracranial pressure
   - (b) Psychic disturbances
   - (c) Circulatory failure
   - (d) Complete heart block

and then continues, in part, as follows:

"All the experiments bearing on the pathogenesis of the hypertension induced by renal ischemia indicate that it is not of reflex nervous but of humoral origin. Some chemical substance circulating in the blood and formed as a result of renal ischemia constricts the peripheral arterioles and thus elevates the blood pressure.****

The experimental hypertension in animals without demonstrable evidence of renal excretory insufficiency is the experimental analogue of benign hypertension commonly seen in patients. Similarly, when the renal arteries of these animals are still further constricted uremia develops with extensive retinal lesions, and post-mortem examination shows arteriolar necrosis like that observed in malignant hypertension in man. For the production of arteriolar necrotic lesions in the animal two factors are essential, (1) hypertension and (2) progressive renal insufficiency—the same combination that always occurs in the malignant phase of essential hypertension in man. Much light is thus thrown on the cause of such lesions, and it is no longer necessary to invoke toxic agents such as lead, syphilis and rheumatic fever to explain them."

While Goldblatt's work does not throw any light on the nature of human arteriosclerosis, it goes far in clearing up the problem of hypertension, which has baffled clinicians for decades.

It now appears that the clinical course pursued in hypertension is determined primarily by the progress of the vascular disease in the kidneys. This in the majority of cases is sufficient to cause chronic hypertension, but not rapid enough to impair renal excretory function. Thus most hypertensive patients die of heart failure or of a cerebral accident

before uremia develops. However, the renal vascular changes may progress to a point where the excretory function of the kidney is impaired, when the clinical picture of malignant hypertension with uremia appears. In other words, the progress and extent of vascular disease in the kidneys determine whether essential hypertension runs a benign or a malignant course.

Dr. Scott briefly summarizes the status of hypertension in the light of Goldblatt's work as follows:

"Arterial and arteriolar sclerosis of the renal vessels leads to renal ischemia, which by a humoral mechanism produces an increased muscular tone in the peripheral arterioles and thus causes elevation in the systemic blood pressure."

This interesting presentation merits attentive study. It might well have been entitled: Hypertension: Bright Vindicted. In any event, Richard Bright must be given great credit for his prescience in suspecting relationship between renal ischemia and hypertension; and Goldblatt must be awarded the accolade for his brilliantly conceived and beautifully carried out experiments, demonstrating the truth of Bright's hypothesis, which had lain dormant for a century.

TUBERCULOSIS

P. P. McCain, M. D., *Editor,* Sanatorium, N. C.

The Eradication of Bovine Tuberculosis in the United States

The eradication of tuberculosis from cattle in the United States is said to be the finest demonstration of tuberculosis control that the world has ever known. North Carolina has the distinction of being the first accredited State, and this is one of the firsts of which we should be proud. We are indebted to Dr. William Moore, our State Veterinarian, and his associates for this distinction. North Carolina became accredited in 1928, and gradually all of the other States have followed suit until now all are accredited except California, and the eradication has been completed in all but 14 counties of California. To become accredited the State must have not more than one-half of 1% of its cattle showing a positive tuberculin test. Last year Dr. Moore and his assistants tested 32,374 cattle, with only 3 positive reactors—one-tenth of 1%.

This program of eradication was accomplished by wholesale tuberculin testing of cattle within the various counties and by slaughtering all positive reactors. The suitable carcases were used for beef and those badly diseased were destroyed. The cost of the animals slaughtered over and above the price of the beef was borne in part by the individual owner and in part by the County, State and Federal Governments.

This program of eradication in North Carolina has cost these official agencies $311,599.00; the cost to governmental agencies in the United States has been $175,000,000. This cost is sizable even in these recent years of soaring governmental expenditures; but few investments have yielded better returns, either from a financial or a humanitarian standpoint. Cattle owners now rarely ever lose a valuable animal; whereas formerly they would at times lose whole herds on account of tuberculosis.

In years gone by it was rather common in medical dispensaries to see children with scrofula, tuberculous disease of the mesenteric glands, of the peritoneum, of bone and joint. All of these conditions are now much less common and some of them are rare, largely as a result of the eradication of tuberculosis in cattle. It has been estimated that as high as 25% of tuberculous infection in children used to be of bovine origin, and that from one-twelfth to one-seventh of all deaths from tuberculosis were due to bovine infection. The eradication of tuberculosis in cattle has played a large part in the greatly reduced human death rate from tuberculosis in recent years.

The control or eradication of tuberculosis in human beings necessarily has to be accomplished through different procedures. The factors necessary for control are known, and, if sufficient funds were available, tuberculosis in human beings as well as in cattle would soon become a minor cause of death.

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor,* Greensboro, N. C.

Cooperation Among Hospitals

1. United we stand and divided we fall. This should be *well* remembered in the hospital world. There is much work to be done, yet some of us see so dimly.

2. There are about 120 hospitals in North Carolina. They employ an average of 60 persons per hospital, making a grand total of 7,200 who are receiving their livelihood from the hospitals of our State. They represent some of our best and most progressive citizens. They are doing a work that is vital to our people. There is daily demand for an increased service.

3. If this demand is met, who is to meet it? Will it not have to come from those who are now rendering in part the hospital service now available? Is it not plain that their cause is a com-

mon one? Should there be any room for squabbling in the ranks of these workers? If the purpose is the same why should issues be brought up that deal only with who is to have control, who are the big bosses, who are the dictators and to whom shall they dictate? For some time our hospitals have been torn up by just such things. It is time for these petty issues to be settled.

4. Who can settle them? It would seem reasonable for the leaders of the organizations representing the hospitals to attempt a peaceable settlement. If this desire is uppermost in the minds of the leaders of the various groups I am convinced that lasting good can be accomplished. What will their answer be? *Will* they accept the challenge or *will* they *not?*

5. The fact that different trades and professions must of necessity make up the personnel of a hospital should not prevent harmony and coöperation, any more that it should in the railroad industry, the manufacturing or the building trades. Would these organizations progress if the brakeman, the machinist or the architect should dominate and dictate to all other departments? Would it not mean ruination and destruction for all?

6. The *handwriting on the wall is very plain* to see. No group of individuals can dominate and dictate without hurt to all. Because our purpose is the same our aims and aspirations will be accomplished only through coöperation. Any selfishness and greed must give way to unselfishness and a coöperative group spirit.

7. It can be done; it should be done; it must be done. I call upon every nurse, every business manager and every doctor to help bring unity of effort, singleness of purpose and perfect harmony within our own ranks in order to meet the growing demand that is upon us as *hospital* owners and operators.

Letter from the Auxiliary

Last month we told you of our birth in 1923 and of the cordial welcome extended us by President John Wesley Long. We promised to tell how well we had kept our promise to be loyal to the doctors in sickness and in health. We have done our part so well that we sometimes wonder if Dr. Long was not mistaken about the relationship existing between our organization and the Medical Society. He called it the relationship existing between father and daughter, but that "love, honor and obey" and caring for them "in sickness and in health" sounds suspiciously like the marriage ceremony.

Each year at the State Convention we have entertained the visiting wives and daughters and have in every way done our utmost to "promote friendliness among the families of the medical profession." Finding that this did not use up all our energies and that we were not quite living up to our promise to take care of them when sick, in 1927 Mrs. R. S. McGeachy proposed that we maintain a bed at Sanatorium. "Doctors and members of doctors' families shall be given preference in choosing the occupants for this bed," but "should no doctors' family need this bed it shall be used by any worthy person chosen by the committee." We have had the privilege of having one doctor use our bed for about 18 months, a doctor's daughter was our guest for several months; a nurse stayed with us till she was transferred to Colorado; and we have served several children and youths. At present a 20-year-old youth from Tyrrell County is occupying this bed.

In 1931 Mrs. W. B. Murphy promoted an Auxiliary Loan Fund to "be lent to the sons and daughters of doctors to be used in the junior and senior years of their academic college course and for postgraduate courses." Three doctors' daughters have borrowed from this fund.

In 1935 Mrs. J. B. Sidbury proposed to the Board of Directors that an Endowment Fund be started for the bed and that the bed be given a name. Mrs. McGeachy, who had first proposed the bed project, suggested that the bed be named the McCain Bed in honor of Dr. P. P. McCain and his wife, Sadie McBrayer McCain, our organizing president. The McCain Bed Endowment idea met with immediate approval. The first donation was made by Mrs. Sidbury only because she had the floor and spoke before Mrs. E. C. Judd and Mrs. J. C. Wessell had a chance. Article 12 of our By-Laws states: "There shall be an endowment fund for the McCain Bed at Sanatorium. All moneys given to the Auxiliary without specified destination shall be placed in this fund."

Each year the local associations sponsor some form of entertainment, the proceeds from which go to one or more of these projects. Last year Raleigh had a dance on Washington's Birthday; Guilford County Auxiliary had a tea with freewill offerings for the Bed and Loan funds; several districts reported subscriptions procured for *Hygeia*, the commission on which goes to the Endowment Fund; the New Hanover County Auxiliary holds a bridge party each year for the Bed and Endowment funds; several districts made donations of amounts obtained either as memorials or from parties interested in the various funds.

Through the years our auxiliary has grown in numbers; our financial status has steadily improved. Without ostentation we have kept the

promises given in 1923. Under the efficient and wise leadership of Mrs. Joseph A. Elliott, our present president, we are steadily progressing. She has given unselfishly of her time, strength and thought, and we are following her leadership enthusiastically. We feel that we have indeed "fought a good fight and kept the faith."*

MRS. J. B. SIDBURY, *Chairman Publicity, Auxiliary to the Medical Society of the State of North Carolina*

*This is not to be taken as an indication that the Auxiliary is saying "I have finished my course." It is still fighting a good fight, and gives every indication of keeping on so doing.—*Editor.*

DOESN'T DETROIT BOAST OF ITS HEALTH DEPARTMENT AND RECORDS?

Under Current Comment, *The Journal of the A.M.A.* for Dec. 24th:

The National Tuberculosis Association investigated the homes and relatives of all girls and women between 15 and 25 who died from tuberculosis (1) in New York City in 1929 and (2) in Detroit in 1930. The tuberculosis death rate among young women was 83 per 100,000 in New York City, 138 per 100,000 in Detroit!

There was evidence of greater mortality among uneducated than among educated girls. There was no reason to believe that industrialization or any specific occupation was responsible or that increased tuberculosis mortality among young women is due to insufficient clothing, diet, lack of sleep or unusual recreational habits.

OF INTEREST TO DOCTORS WHO HAVE THE CARE OF ADDICTS
(Public Health Reports, Dec. 16th, '38.)

A narcotic addict desirous of entering the U. S. Public Health Service Hospital at Lexington, Ky., or Fort Worth, Tex., for treatment as a voluntary patient will, upon application to the Surgeon General of the U. S. Public Health Service, Washington, be furnished the necessary blanks and instructions. A charge of $1 per day is made; but if an applicant is impecunious, this charge will be waived upon presentation of certain proof. In order to be eligible for treatment, a person must be a citizen of the U. S. and be a habitual user of opium or coca leaves or their derivatives, or of Indian hemp or peyote. A medical examination by a physician designated by the applicant, or by a U. S. Public Health Service medical officer, is required. Should the report of this medical examination indicate the applicant is an addict, the Surgeon General addresses a letter to him authorizing his admission any time within 4 weeks of the date of the letter. He cannot be confined without his consent. At the present time there are no accommodations for women patients, but it is anticipated that such accommodations will be available early in 1940.

INSTRUCTIONS TO PATIENTS REGARDING CHANGING GLASSES
(C. C. LOCKWOOD, *Chicago, in Clin. Med. & Surg.*, Feb.)

Current fallacious opinions of laymen are: 1) That, regardless of age, eyes vary in refraction from year to year and should, therefore, be examined periodically; 2) that nearsighted persons must wear their glasses constantly to keep from becoming more myopic; 3) that the principal cause of myopia is continued close work or reading.

Symptoms recur in hyperopia, not because of a change in the refractive error, but because, after a time, the eyes require a lens more closely approximating full correction.

The patient should be told that he, himself, is the best judge of the length of time his glasses are useful. A student, who reads daily for long periods and must have efficient eyes, may require a second examination at the end of two years; whereas a housewife, who greatly dislikes glasses and is indifferent to an occasional headache, may delay returning for re-examination as long as 10 years.

Hyperopia increases and myopia decreases each year from birth until the end of the seventh year; after the eighth year hyperopia decreases toward emmetropia. At about the 20th year, both myopia and hyperopia tend to become stationary.

There is no evidence that the course of progressive myopia with retinal atrophy, myopic conus, or halo, or even the course of simple myopia, is over checked or altered by glasses. Most myopic patients can be assured of useful vision all their lives. In the majority of cases of myopia glasses need not be worn if clear distant vision is not essential.

Glasses are to be regarded as aids to increase vision, as in myopia, or to relieve ciliary fatigue. They are not curative.

THE SAMUEL D. GROSS PRIZE
$1500.00

Essays will be received in competition for the prize until January 1st, 1940

THE conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essay, which must be written by a single author in the English language, should be sent to the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22nd St., Philadelphia, on or before January 1st, 1940.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

EDWARD B. HODGE, M.D.,
CHARLES F. MITCHELL, M.D.,
CALVIN M. SMYTH, JR., M.D.,
Trustees.

PHILADELPHIA, February 1st, 1939

THE WOMAN'S MEDICAL COLLEGE, Philadelphia, will benefit by the will of Dr. Margaret P. Kuyk, 78-year-old physician, admitted to probate in the Henrico Circuit Court. Dr. Kuyk, who died at her Richmond residence, January 16th, mentions in the will that she omits any legacy to the University of Richmond because she made "a considerable gift" during her lifetime to that university as a memorial to her husband.

THERE is a Dorsetshire proverb that no workman over 40 hears a bat squeak.—*Cannon.*

HISTORIC MEDICINE

AMERICAN DOCTORS IN OTHER FIELDS

BY

THURMAN KITCHIN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

(Appearing From Month to Month in this Journal. To Appear in Book Form)
(Copyright Applied For)

JOHN WILLIAMSON PALMER
(1825-1906)

JOHN W. PALMER, traveler, editor, physician and poet, was born in Baltimore, April 4th, 1825. He received the M.D. degree from the University of Maryland Medical School in 1846 and began practice in San Francisco. After a year he became surgeon for the East India Company in which capacity he served in the second Burmese War. He traveled extensively in the Far East, returned to the United States in 1853 and thereafter devoted most of his time to literature.

For a time during the War Between the States he was southern correspondent for *The New York Tribune*. He held important positions in the Confederate Government and was a member of the staff of Major-General John C. Breckenridge.

He was a lyric poet of the first order. His best known poem was the Confederate war song, Stonewall Jackson's Way. This is said to have been written within the sound of the guns during the battle of Sharpsburg.

Come, stack arms, men! Pile on the rails
  Stir up the camp-fire bright;
No growling if the canteen fails,
  We'll make a roaring night.
Here Shenandoah brawls along;
There burly Blue Ridge echoes strong,
To swell the Brigade's rousing song
  Of Stonewall Jackson's way.

We see him now—the queer slouch hat
  Cocked o'er his eye askew;
The shrewd, dry smile; the speech so pat,
  So calm, so blunt, so true.
The "Blue-Light Elder" knows 'em well;
Says he, "That's Banks—he's fond of shell;
Lord save his soul! we'll give him—" well!
  That's Stonewall Jackson's way.

He's in the saddle now. Fall in!
  Steady! the whole brigade!
Hill's at the ford, cut off; we'll win
  His way out, ball and blade!
What matter if our shoes are worn?
What matter if our feet are torn?
  "Quick step! we're with him before morn!"
  That's Stonewall Jackson's way.

Silence! ground arms! kneel all! caps off!
  Old Massa's goin' to pray.
Strangle the fool that dares to scoff!
  Attention! it's his way.
Appealing from his native sod,
In forma pauperis to God:
  "Lay bare Thine arm: stretch forth Thy rod!
    Amen!" That's Stonewall's way.

The sun's bright lances rout the mists
  Of morning, and, by George!
Here's Longstreet, struggling in the lists,
  Hemmed in an ugly gorge.
Pope and his Dutchmen, whipped before;
  "Bay'nets and grape!" hear Stonewall roar;
  "Charge, Stuart! Pay off Ashby's score!"
  In Stonewall Jackson's way.

Ah! Maiden, wait and watch and yearn
For news of Stonewall's band!
Ah! Widow, read, with eyes that burn,
That ring upon thy hand.
Ah! Wife, sew on, pray on, hope on;
Thy life shall not be all forlorn;
The foe had better ne'er been born
That gets in Stonewall's way.

Among his other works are: The Queen's Heart, The New and the Old, Up and Down the Irawadi, King's Mountain, Folk Songs, After His Kind, The Fate of the Farleighs, The Old Abode. His most touching poem is For Charlie's Sake.

The night is late, the house is still;
The angels of the hour fulfil
Their tender ministries, and move
From couch to couch in cares of love.
They drop into thy dreams, sweet wife,
The happiest smile of Charlie's life,
And lay on baby's lips a kiss,
Fresh from his angle-brother's bliss;
And, as they pass, they seem to make
A strange, dim hymn, "For Charlie's sake."

My listening heart takes up the strain,
And gives it to the night again,
Fitted with words of lowly praise,
And patience learned of mournful days,
And memories of the dead child's ways.
His will be done, His will be done!
Who gave and took away my son,
In "the far land" to shine and sing
Before the Beautiful, the King,
Who every day doth Christmas make,
All starred and belled for Charlie's sake.

For Charlie's sake I will arise;
I will anoint me where he lies,
And change my raiment, and go in
To the Lord's hause, and leave my sin
Without, and seat me at his board,
Eat, and be glad, and praise the Lord.
For wherefore should I fast and weep,
And sullen moods of mourning keep?
I cannot bring him back, nor he,
For any calling, come to me.
The bond the angel Death did sign,
God sealed—for Charlie's sake, and mine.

I'm very poor—this slender stone
Marks all the narrow field I own;
Yet, patient husbandman, I till
With faith and prayers, that precious hill,
Sow it with penitential pains,
And, hopeful, wait the latter rains;
Content if, after all, the spot
Yield barely one forget-me-not—
Whether or figs or thistles make
My crop, content for Charlie's sake.

I have no houses, builded well—
Only that little lonesome cell,
Where never romping playmates come,
Nor bashful sweethearts, cunning- dumb-
And April burst of girls and boys,
Their rainbowed cloud of glooms and joys
Born with their songs, gone with their toys;

Nor ever is its stillness stirred
By pur of cat, or chirp of bird,
Or mother's twilight legend, told
Of Horner's pie, or Tiddler's gold,
Or fairy hobbling to the door,
Red-cloaked and weird, banned and poor,
To bless the good child's gracious eyes,
The good child's wistful charities,
And crippled changeling's hunch to make
Dance on his crutch, for good child's sake.

How is it with the child? 'Tis well;
Nor would I any miracle
Might stir my sleeper's tranquil trance,
Or plague his painless countenance:
I would not any seer might place
His staff on my immortal's face,
Or lip to lip, and eye to eye,
Charm back his pale mortality.
No, Shunamite! I would not break
God's stillness. Let them weep who wake.

For Charlie's sake my lot is blest:
No comfort like his mother's breast,
No praise like hers; no charm expressed
In fairest forms hath half her zest.
That death left lonely in the nest;
For Charlie's sake this bird's caressed
For Charlie's sake my heart is dressed,
As for his birthday, in its best;
For Charlie's sake we leave the rest
To Him who gave, and who did take,
And saved us twice, for Charlie's sake.

Doctor Palmer considered Ned Braddock his best poem. This was written in his eightieth year, one year before his death in Baltimore, February 26th, 1906.

HENRY DRAPER
(1837-1882)

Doctor Draper was born in Prince Edward County, Virginia, March 7th, 1837. He received the M.D. degree from the University of the City of New York Medical School in 1858, became a member of the medical Staff of Bellevue Hospital and Professor of Physiology in the medical department. But later his interest in Astronomy grew so that he devoted all of his time to the stars. He constructed a reflecting telescope which enabled him to get a photograph of the moon fifty inches in diameter, the largest ever made up to that time. He made many improvements in methods of astronomical photography, especially in regard to the spectre of the stars. The Congress of the United States awarded Dr. Draper a special gold medal for his work as superintendent of the photographic department of the commission sent out by the Government to study the transit of Venus in 1874. This is said to be the first recognition ever given to a scientist by the Congress of the United States.

His greatest single achievement was the discovery of oxygen in the sun in 1877.

In 1882 he went into the Rocky Mountains to make some scientific observations and exposure in a snow storm resulted in pneumonia from which he died November 20th, 1882.

WILLIAM JAMES
(1842-1910)

William James, eminent psychologist, philosopher, religious leader and physician was born in New York City, January 11th, 1842. After extensive study abroad he entered the Harvard University Medical School and received the M.D. degree in 1869. He was Instructor in Physiology at Harvard; then Instructor in Anatomy and Physiology, and later Assistant Professor. In 1880 he gave up these medical appointments and was made Assistant Professor, and, five ears later, Professor, of Philosophy.

He was perhaps the most popular American psychologist. He was a pioneer in analytical psychology through his lectures and his technical treatment of the mind. He established the first psychological laboratory in this country. His interest shifted from psychology to philosophy and his influence has been greater in philosophy.

The chief contribution of James was his pragmatic conception and treatment of philosophy. He brought philosophy from the region of metaphysics down to the practical and dealt with human life and its problems as they exist. His idea was that the test of truth was not to be discovered in logic, but rather in whether an idea would work in practice. Industrial America had the right stage-setting for this type of philosophy and it may be said that James directed the play, and was to the 20th Century what Francis Bacon was to the 17th.

However, the greatest influence of Dr. James was in the field of religion. His training in medicine and psychology and philosophy helped to make him feel that religion is concerned with all life's affairs. Consequently, he felt that religion could not be reduced to theological platitudes and abstractions, but that it must deal with the raw facts of the world in which man finds himself. James considered the world as by no means complete; that it is in a process of growth and that there is room for progress, freedom and new attitudes and approaches. It was this pragmatic conception of religion which ushered in our present doctrine of humanism or the humaritarian conception of religion, which in many different forms has become widespread in religious circles.

Dr. James exerted his influence through his lectures and writings. The following are the more important of his many works: *The Principles of Psychology, Talks to Teachers on Psychology, The Varieties of Religious Experience,* and *Pragmatism.*

Among his shorter papers, the following should be mentioned: The Feeling of Efforts, The Dilemma of Determinism, Is Life Worth Living? and The Will to Believe.

He was a member of important scientific societies in America, France, Italy, Prussia and Denmark. Dr James was a doctor of letters at Padua and Durham; of laws at Harvard, Princeton and Edinburgh, and of science at Geneva and Oxford.

He delivered many important lectures but the most notable ones were The Lowell Lectures in Boston, Gifford Lectures at Edinburgh, and Hibbert Lectures at Oxford.

Dr. James died at his country home at Chocorua, New Hampshire, August 26th, 1910.

GEORGE DAVID STEWART
(1862-1933)

This eminent New York surgeon was born in Cumberland County, Nova Scotia, December 28th, 1862. He received the M.D. degree from Bellevue Hospital Medical College in 1889 and became Professor of Surgery in University and Bellevue Hospital Medical College. He was visiting surgeon to St. Vincent Hospital and

consulting surgeon to Englewood, (New Jersey) Hospital; St. Mary's Hospital, Orange, New Jersey; United Hospital, Port Chester; Southside Hospital, Bayshore. St. Joseph's Hospital, Yonkers; and to Bellevue Hospital.

He held the presidency of the American College of Surgeons, of the New York Academy of Medicine and of various other medical associations.

But Dr. Stewart was more than a great surgeon and great teacher, he was a scholar, a poet and a deeply religious man. This piece of advice which he gave to his students in New York University is often quoted:

> "Time spent on the knees in prayer will do more to remedy heart strain and nervous worry than anything else."

He did not allow his specialty to master him and curb his interest in other things. Perhaps his chief contribution beyond the field of surgery was in his poetry. The verses of Dr. Stewart given below are quoted from an address by Dr. Bernard Sachs which was printed in the January, 1936, issue of the *Bulletin of The New York Academy of Medicine*:

THE ROAD

High road, low road, all roads lead to Rome:
But the luring, laughing, beckoning road
Is the road that leads back home:
Level lights along the fields, ebbing tides of day
Pouring through the Western Strait, in the East the grey
Wave of night on-rushing fast, crested with darkening foam;
And then, O wanderer, at last, the lights, the loves of home.

Thy hand in my hand forever and a day,
Down the street, beyond the town, half the world away;
Tinkling bells against the dawn; winds across the plain;
Turn while hurrying on and on to kiss you, love again,
White nights, laughing days, wherever we may roam,
For all thy ways are heavenly ways, and every trail leads home.

THE CLICKING OF THE REEL

And when I'm crossing Jordan
  It shall be my dearest wish
To obtain a heavenly order
  Permitting me to fish.
There'll be fewer tears, less sighing,
  Less reluctance by a deal,
And I'll land with colors flying,
  To the clicking of the reel.

A TIRED DOCTOR'S PRAYER

When I, having finished with things below,
Lie out 'neath the sod alone,
Raise no cold monument to me
Of brass or bronze or stone;
But plant me beneath a big oak tree,
With its roots firmly fixed in the sod,
And its branches pointing everywhere
To the throne of the living God.

Plant me out in the open on some fair hill
And not in a burying ground;
'Twould be hard for me I know to keep still
With other folks lying around:

Oh God! for a day or two of rest
Away from all sickness and sin,
Where soft winds blow the hours out of the West,
That cool dawns have wafted in.

Yes, plant me beneath a big oak tree
Wide spread to each wind that blows!
If there is none to be found, *plant a* young one on me
I'll have time to wait while it grows.

DON'T CUT THE STRING

So I'll take this for my motto,
Take this simple homely truth,
It will serve for age and wisdom,
Be a beacon, too to youth;
I'll engrave it on my memory
In my hearts of hearts 'twill cling,
When the battle's at its fiercest
"Be too proud to cut the string."

And when the strife of life is ended,
When my battle's lost or won,
And my tattered banner's drooping,
Gilded by the setting sun;
May my heart be at its bravest
And my voice mantain its ring,
As I bid the grim destroyer
"Go ahead and cut the string."

Dr. Stewart died in New York, March 9th, 1933.

WILLIAM SIDNEY THAYER
(1864-1932)

Doctor Thayer was born in Milton, Massachusetts, June 23rd, 1864. He received the B.A. degree from Harvard in 1885 and the M.D. degree from the same University in 1889. After a year of study in Berlin and Vienna he began practicing in Boston, but he was soon called to Johns Hopkins as assistant to Osler in the Department of Medicine. The inspiration he got from Osler, plus his excellent preparation, made it possible for him at once to begin valuable medical researches. When Osler left Hopkins to become Regius Professor of Medicine at Oxford in 1905, Thayer was made Professor of Clinical Medicine.

When this country entered the World War, Thayer was appointed Director of General Medicine for the Expeditionary Forces in France. In April, 1918, he was elected Professor of Medicine at the Johns Hopkins Medical School and also Physician-in-Chief to the hospital. However, he did not return to the United States and take up his new duties at The Hopkins until after the Armistice. In May he was made Chief Consultant of the Medical Service of the American Expeditionary Forces with the rank of Colonel. Returning to America he assumed his duties a The Hopkins and in 1921 was made Emeritus Professor of Medicine. He wa a member of many scientific societies and was awarded many honorary degrees.

Notwithstanding his tremendous activities in the field of medicine as researcher and teacher, and his large consultant and hospital practice, somehow he found time for literary persuits.

In 1926 was published a volume under the title, *America—1917 & Other Verse*, and in 1931 appeared the volume, *Osler & Other Papers*. The latter is a collection of papers and addresses which had been delivered during his active prfessional life, covering the period from 1904 through 1931.

The following taken from his volume *America— 1917 & Other Verse*, will give an idea of the character of his verse:

OSLER

An eye whose magic wakes the hidden springs
Of slumbering fancy in the weary mind.
A tongue that dances with the ready word
That, like an arrow, seeks its chosen goal,
And piercing all the barriers of care,
Opens the way to warming rays of hope.
A presence like the freshening breeze that as
It passes, sweeps the poisoned cloud aside.
An ear that 'mid the discords of the day,
Swings to the basic harmonies of life.
A heart whose alchemy transforms the dross
Of dull suspicion to the gold of love.
A spirit like the fragrance of some flower
That lingers round the spot that this has graced,
To tell us that although the rose be plucked
And spread its perfume throughout distant halls,
The vestige of its sweetness quickens still
The conscience of the precinct where it bloomed.

From America—1917—

And then the hour came—The blow was struck.
Ruthless ambition cast aside its mask.
The trap, long laid, fastened its iron jaws
On Liberty's fair limbs. A noble race
Freed from constraining bands that held in thrall
Less favoured kindred, by a common bond
To which thou wert a part, by treason's foul
And reeking hand, still unsuspecting fell—
All save high honour, gone. The sister land
That in our hour of need had spilled her blood
That we might rise enfranchised, saw her fresh
Fields wasted by a barbarous host. All pacts
That years of growing freedom held assured,
Were torn asunder. Brutish force resumed
Its sway as in the hey-day of the older Huns.
Again the aggressor's lust enslaved its prey
That vainly trusting, left unbuilt the wall
That had restrained the brutal, faithless hordes.
Again as in forgotten days of old,
The helpless hostage paid the bloody debt
Claimed by the thwarted savage as his due,
And all the gains that man's companionship
Through brightening years has seemed to consecrate,
Fell as a robe and falling, left revealed
In all his nakedness the human beast.
Dull and obdurate, self-deceived, elate
In his achievement, blind to all save that
Which in his fancy he may claim his own,
Maddened with self-esteem, loud he proclaims
His undisputed kinship with the Gods;
And, with the might of long prepared years,
He seeks to force a hateful harness on
The world.

.....

O thou that wert my country, may the hour
Yet dawn when thou shalt welcome once again
The guiding genius of thy brighter days;
When thou shalt know again the might that arms
Him who stands fearless in the cause of right;
The power to see and feel and understand,
Courage to dare, the will to do, the strength
To act!

Till then my country lies beyond
The seas with those, our brothers who have known
That they who give their life for truth shall gain
A larger liberty than life affords.

.....

Give but the word and from New England's hills,
From fragrant gardens of the balmy South,
From teeming highways of the echoing town,
From the broad prairies of the golden West,
From where in the thin air, the rosy peaks
Glow with the radiance of the setting sun—
Look where they rise, the shadowy souls of them
That were thy greatness, reincarnate now
In shapes through which the crimson torrent flows
Thy call. See how their brows grow bright
That is thy life. See where they rise to meet
With the eternal luster that enfolds
Them that press forward in a righteous cause.
Behind them love and life and home and hope,
Behind them fear and doubt and earth and care,
Before them the abyss of hell itself
Were sweet if thou but lead them on their way.
O mother, speak to them! Mother they wait!
Mother, they hear thy call! Mother, they come!

From The Light That Was—

Now thou art gone and all is dark and cold;
And yet not all, for as the mountain top
Grows roseate when the sun has hid his face,
So has thy love yet left an afterglow
That bathes the darkening autumn of my days;
So shall the memory of what thou wert
Yet gild the summits of my rugged way,
Yet guide me on the path that I must tread.
For who has known the sunshine of thy love
Had touched a radiance that can never fade.

From Henry's Lake. September, 1921—

The jagged peaks clothed in their ermine robes,
Glitter with the magic light;
And once green hillsides borrow from the sun
A glory that illumes with tongues of flame
The peaceful mirror sleeping at their feet.
And passes on its way.

In addition to his own poems, this volume contains many poems which Thayer translated from the Russian.

Dr. Thayer died in Baltimore, December 10th, 1932.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior
JAMES K. HALL, M.D. ..... Richmond, Va

Eye, Ear, Nose and Throat
EYE, EAR AND THROAT HOSPITAL GROUP ..... Charlotte, N. C

Orthopedic Surgery
O. L. MILLER, M.D. } Charlotte, N. C.
JOHN STUART GAUL, M.D. }

Urology
HAMILTON W. MCKAY, M.D. } Charlotte, N. C.
ROBERT W. MCKAY, M.D. }

Internal Medicine
P. H. RINGER, M.D. ..... Asheville, N. C.

Surgery
GEO. H. BUNCH, M.D. ..... Columbia, S. C

Obstetrics
HENRY J. LANGSTON, M.D. ..... Danville, Va.
IVAN M. PROCTER, M.D. ..... Raleigh, N. C.

Gynecology
CHAS. R. ROBINS, M.D. ..... Richmond, Va.

Pediatrics
G. W. KUTSCHER, JR., M.D. ..... Asheville, N. C

General Practice
WINGATE M. JOHNSON, M.D. ..... Winston-Salem, N. C.

Clinical Chemistry and Microscopy
C. C. CARPENTER, M.D. ..... Wake Forest, N. C
R. P. MOREHEAD, B.S., M.A., M.D., Wake Forest, N. C.

Hospitals
R. B. DAVIS, M.D. ..... Greensboro, N. C.

Cardiology
CLYDE M. GILMORE, A.B., M.D. ..... Greensboro, N. C

Public Health
N. THOS. ENNETT, M.D. ..... Greenville, N. C.

Radiology
ALLEN BAEKER, M.D. } Petersburg, Va.
WRIGHT CLARKSON, M.D. }

Therapeutics
J. F. NASH, M.D. ..... Saint Pauls, N. C.

Tuberculosis
P. P. MCCAIN, M.D. ..... Sanatorium, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

SOME VITAMIN DEFICIENCIES

WHO chose to designate certain essential food elements as Vitamins? Whoever it was, he made a wise and a proper choice, for these substances are essential to life—at least to abundant life—and at least some of them have the chemical structure of amines.

Abundant proof has been given that vitamin deficiency is a fairly common cause of ill health and that supplying the deficiency is a highly efficient form of therapy. Here comes in the disturbing factor of the tendency to exaggeration. However good a good thing may be, enthusiasts will represent it as better than it is; however bad, as worse than it is. The "deer peepul" have always looked for a panacea; in all probability they will keep right on looking—certainly so long as money may be got by luring them on. There comes to mind the fact that a big department store in our city recently advertised all the vitamins put up in one globule, the globules sold in boxes containing a convenient number, sold at a few cents per day, and touted to do everything for all that the Lord did for Moses—get him to be "an hundred and twenty years old .... and his eye was not dim nor his natural force abated."

Already has claiming too much for vitamins caused confusion in the minds of honest doctors eager to do their best for their patients. Unless we can learn what we can reasonably expect from their intelligent administration, and then so limit their therapeutic exhibition, these valuable agents will certainly fall into disfavor.

An excellent dealing with this subject, somewhat by indirection, is that of Dalldorf.[1] Rickets was well understood long before vitamins were known, and scurvy was accurately described and its nature more than suspected. Later investigators have made discoveries which have convicted each of several vitamin deficiencies of producing specific effects in the human economy.

The essential lesion of vitamin-A deficiency is replacement of columnar by squamous epithelium which latter rapidly becomes keratinized, with increased liability to infection. One of the stigmata is night-blindness. Even under large doses of vitamin-A the condition usually persists, probably because the deficiency is *irreversible*.

Those who use alcohol in quantities seem to require an excessive intake of vitamin-B1. Vitamin-C's relationship to growth and maintenance of skeletal structures is generally known; what is less known is that individuals having severe infectious diseases require high rations of this vitamin.

1. Dalldorf, Gilbert. Vitamin Deficiencies. *Bull. N. Y. Academy of Med.*, Oct., 1938.

Following Dalldorf, Williams[2] recognizes that vitamins must be viewed by the medical practitioner as acting more like hormones than like drugs; but that it must be borne in mind that vitamins must be derived from without the body. He deals with the choice and use of human food to insure maximum health and longevity; and, noting that the mode of action of the vitamins is fundamental to any sound philosophy in this regard, he reviews recent developments in the physiology of the vitamins.

The necessity of vitamin-B1 for carbohydrate utilization is elaborated to the point that this agent is necessary in the metabolism of all living things; and it is said that this is true to a considerable degree of the other water-soluble vitamins. It has been established that the difference between beriberi-producing diets and poor-class American diets is not great, with respect to the content of vitamin-B1. It is surmised that an average "satisfactory" diet contains a minimum requirement of this vitamin, and the capacity of the body for storing any excess against a time of need is very limited. All this, and the additional fact that any excess is eliminated promptly and readily by way of the urine, suggests the wisdom of adding vitamin-B1 to the diet in any case of suspected deficiency of this agent.

The point is made that, while vitamin-B1 is not peculiarly a nerve vitamin, nerve tissue is peculiarly susceptible to the effects of metabolic disturbance which, less conspicuously, affects adversely the functioning of all other organs.

Vitamins have other spheres of usefulness. More on the subject will be presented in later issues. Our dealing with the subject is with a view to clarification.

2. Williams, R. R., Our Vitamin-B1 Supply in Relation to Human Needs, *Bull. N. Y. Academy of Med.*, Oct. 1938.

COMMUNICATIONS

A Letter to Dr. Long on Medical Military Preparedness

January 21st, 1939.

The Secretary,
Medical Society of the State of North Carolina,
Roanoke Rapids, North Carolina.

Dear Sir:

In the National Defense the medical profession is deeply involved and plays an essential part . . . In modern war every resource of the nation must be made available and may be necessary to a successful defense . . . The vastness of the forces required, the ramifications of the industrial effort required to maintain those forces, and the speed and power with which attack may come, make necessary consideration of the measures necessary to defense well in advance. No modern military force can long maintain its strength or its morale without an efficient medical service.

The efficiency with which the Medical Department accomplished its mission in the World War was in large part due to the close association which had been established prior to the war, between the Regular Army Medical Corps and the great civilian profession. It is not to be expected that physicians can devote much time to this matter, nor is it necessary. It is thought, however, that it would be feasible to have some consideration given to this subject in connection with the county medical society meetings, by devoting a part, or all, of at least one meeting a year to the matter. The amount of time and the subjects discussed would of course vary, and be determined by the wishes of the society, but the mere fact that the subject had been considered by every local society in the State, even if only for a brief discussion, would be of value.

If desired by the local society it would probably be possible in many cases to arrange for presentations by Regular Army Officers, either combatant or medical. In many of the communities there are Reserve Officers who are competent to present the matter. I am of the opinion that much of interest to the profession would be found in such presentations.

I am sending a similar letter to the Secretary of the society of each of the other states in the Fourth Corps Area—Alabama, Tennessee, South Carolina, Georgia, Louisiana, Mississippi and Florida—in the hope that throughout this Corps Area there may be initiated and carried through, a program that will ensure consideration of this matter at least in one meeting a year.

I request your comment and suggestions as to further procedure if you consider the matter feasible.

Sincerely,
N. L. McDiarmid,
Colonel, Medical Corps,
Corps Area Surgeon.

UNION MEDICALE BALKANIQUE

22, Peyikhane caddesi, Istanbul
December 31st, 1938

Dear Sir and Colleague,

I am sending you enclosed the manifest which has been voted by the doctor members of The Balkan Medical Union at their meeting for the 5th Medical Week at Istabul. I ask you earnestly to publish it in your paper.

The same manifest is addressed to the medical journals of the whole world with the aim of rousing a favorable public opinion for adopting the necessary measures against the dangers to which the civil population will be exposed during a "total war."

With the assurance that this proposition will be warmly received by yourself,

I am sir
Very truly yours,
The president of the Balkan Medical Union
Prof. Dr. Akil Moukhtar Ozden

The Balkan Medical Union, in session at Istanbul for the 5th Medical Week

having taken into consideration the terrible sufferings which a total war will bring upon the civil population of open towns,

and having discovered that even in its restricted form the project of "sanitary towns" has not yet been adopted and that all efforts made to protect civilians against chemical warfare have till now remained as proposals only and that even the protocol prohibiting the use of asphyxiating gas has not yet been ratified by all nations,

has therefore decided to address itself to doctors of every nation with an appeal to take active measures and to fulfil this professional and humanitarian duty of awakening and stirring public opinion.

The Balkan Medical Union believes that only enlightened international opinion can make plain the imminence of the danger and the proved uselessness, even for the victor, of these terrible atrocities, and can thus lead to effective action.

The immutable truth that

hate breeds only hate, and atrocity breeds vengeance

must be impressed on everyone.

Prof. Dr. Bensis, Dr. Scaramanga (Athenes), Dr. Zika Markovic, Prof. Dr. K. Sahovic, Dr. M. Simovic (Beograd), Prof. Dr. Gheorghiu, Dr. Popescu Buzeu (Bucarest), Prof. Dr. Akil Muhtar Ozden, Prof. Sedat Tavat, Prof. Dr. A. Suheyl Unver (Istanbul).

Radiologic Review & Mississippi Valley Medical Journal has served as the official publication of the Mississippi Valley Medical Society for 3 years. With the continued growth of that society it has seemed fitting that the name of its publication more clearly indicate its principal function, hence the new name—*Mississippi Valley Medical Journal*. (Incorporating the *Radiologic Review*).

Like its predecessor, the new publicat on will be a bimonthly and essentially clinical, especially appealing to the general practitioner in clinical medicine, surgery and radiology.

THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER again offers the Van Meter Prize Award of $300.00, and 2 honorable mentions for best essays submitted on original work on thyroid gland problems. The Award will be made at the annual meeting of the Association which will be held in Cincinnati, May 22nd, 23rd and 24th, providing essays of sufficent merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed 3000 words; must be presented in English; and a typewritten double-spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than April 15th, 1939.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any Journal selected by the author.

Doctor Robbed

Dr. D. W. Ruffin, of Pink Hill, was robbed of his automobile and $300 in cash and checks by a man who held him up the night of Jan. 10th.

A stranger asked the doctor to go with him to "my home in upper Duplin to see my sick baby." They set out in the doctor's car. At a point below the line between Lenoir and Duplin counties, the man stuck a pistol in the physician's ribs and demanded his money. Dr. Ruffin was forced to get out of the car after which the man drove away. The car was found later in woods some miles from Liddell. Dr. Ruffin was conveyed back to Pink Hill by a farmer near whose home the hold-up occurred.

X-ray treatment to the spleen is probably the most satisfactory specific therapeutic agent in primary or uncomplicated thrombopenia with hemorrhage.

Irradation is frequently effective in the treatment of subacromial bursitis.

NEWS

Buncombe County Medical Society

The first meeting for 1939 was called to order at 8 p.m. at the City Hall, by President W. R. Griffin, on January 3rd. 44 members present.

Dr. Craddock was asked to occupy the chair while Dr. Griffin read his presidential address, Some Problems of Modern Medicine.

Dr. Craddock appointed a committee—Drs. Schaffle, Scott and Pendleton—to review the presidential address and report to the Society at our next meeting.

The secretary read a letter from Mr. Buren Jurney, chairman of the North Carolina Industrial Commission, upon which no action was taken.

Dr. White discussed a request from the County Board of Health relative to our endorsing members of the society to serve as members of the Board, moved that Dr. McCall be endorsed by the Society for re-appointment, passed. Dr. Hensley made a brief report on the improvement of Dr. McCall's health. Dr. Beall then moved that Dr. Grady Morgan be endorsed by the Society for re-appointment to the County Board of Health—passed.

Dr. Ward discussed the proposed law to require compulsory immunization of all school children against diphtheria, concluding his remarks with a motion that the Society endorse such a proposal and that the secretary write the local representatives our endorsement. Dr. Ringer amended to include a request that every member of the Society write personal letters of endorsement to the local representatives. Motion as amended passed unanimously.

Dr. Moore moved that the services of Mrs. Geo. Farr, be continued throughout 1939 at the rate of $1 per meeting —passed.

Dr. Moore then gave the annual Library report before the entire Society.

On January 16th the second meeting for 1939, at the City Hall.

The minutes were read, and corrected to read that all children should be immunized against diphtheria at 5 to 8 months of age, rather than before they enter school. With correction the minutes were then approved.

Dr. Harry Briggs described cases of Karatoconus in two young ladies whom he presented to the Society. He dramatically demonstrated the improvement in vision after the application of contact lenses. One patient has been wearing her lenses for three years.

Dr. F. Webb Griffin introduced Dr. Emil Novak, Associate in Gynecology at Johns Hopkins, who spoke most entertaining on Gynecological Endocrinology.

The application of Dr. Robert Carl Bunts was presented for membership. He joined the Society by transfer from Mercer County (W.Va.) Medical Society. Dr. Bunts was unanimously elected by acclamation.

The secretary was then requested to present to the Society a request from the local newspaper to purchase space in a special edditi on of the paper (January 28th) congratulating the paper on the new building. The secretary moved that space be purchased the amount to be decided later. This motion was seconded by Dr. Ringer, who amended it to read that not more than 1/16 of a page be purchased. After considerable discussion the decision to make this purchase was carried by a majority vote.

Adherence of skin to underlying tissues usually means cancer.

Dr. Griffin called the third meeting for 1939 to order at 8 p.m., on February 6th, 65 members and 15 guests present.

Dr. Julian A. Moore presented a Negro boy, with a tumor of the paratid gland. The diagnosis was actinomycosis. Thymol has been successfully used in the treatment of this patient.

Dr. Roy F. Roberts then presented his paper entitled, Sound Health for Our Commonwealth. This paper was an answer to the paper presented by Dr. Schaffle in December. Dr. Roberts very thoroughly covered the field in opposition to Socialized Medicine. The paper was discussed by Drs. Murphy, Weisenblatt, B. O. Edwards, Schaffle, Moore, J. W. Williams, C. H. Cocke, and closed by the essayist. Dr. Murphy prophesied that, "If State Medicine becomes established then the religion of our people will suffer likewise."

The secretary then announced the meeting of the Tri-State Medical Association at Charleston, S. C., February 20th-21st.

He also made a request for instruments, and instrument cabinets, sterilizers and laboratory equipment for the Orthopedic Home.

The North Carolina Neuropsychiatric Society held its annual meeting at Caswell Training School, Kinston, Jan. 27th. A clinic was conducted by Dr. Edith Wladkowski,Caswell School psychologist, and a program presented by children of the state institution. Dr. W. D. Hall, of Raleigh, was elected president, succeeding Dr. James W. Vernon, of Morganton. Dr. William Ray Griffin. Asheville, was elected vice-president. and Dr. Malcolm D. Kemp, Pine Bluff, was re-elected secretary and treasurer.

The Blackwelder Hospital of Lenoir has announced the addition to its staff of Dr. G. M. Billings, Morganton eye, ear, nose and throat specialist. Dr. Billings will continue his practice here, but will hold clinics in Lenoir each Tuesday afternoon, and will be subject to call at any time at the Blackwelder Hospital.

Government Eliminates Fees for Physicians

Physicians who are called upon to give medical aid to Federal prisoners in the western district of North Carolina hereafter will be pad a straight salary instead of fees. The new ruling will apply to federal prisoners in jails in Buncombe, Iredell, Cleveland, Swain and Mecklenburg counties.

The Chatham County Medical Society, inactive for several years, reorganized. Dr. K. M. Lippert, surgeon in charge of the Chatham Hospital, Siler City, presided in the absence of Dr. J. D. Edwards, president of the old society, who could not attend because of illness. Dr. Lippert was elected president, Dr. K. M. Mathiesen, Pittsboro, vice-president; Dr. J. B. Earle, Siler City, secretary-treasurer.

Dr. J. A. Morris, for the past 20 years health officer of Granville County, has tendered his resignation to the county and state health boards to take effect February 28th. Reason for resignation was given as failing health which he felt would be jeopardized by further continuance in the work. His resignation was reluctantly accepted by the county board. A successor will be elected February 10th.

Dr. Ralph Sykes, Mount Airy, has been appointed Halifax County Health Officer and will assume his duties on March 1st. Dr. Sykes was born and reared in Northampton County, near Garysburg. He received his A.B. Degree from Wake Forest College in 1930 and his M.D. degree from the Medical College of Virginia, Richmond, in 1934. He served his internship at Buxton Hospital, in Newport News, and practiced in CCC camps for six months before entering public health service, for which he received special training at the University of North Carolina. He has served as Surry County Health Officer for nearly three years.

Dr. R. S. McGeachy, Halifax County Health Officer, resigned his post to accept the same position in Craven County. He has served Halifax County in this capacity since August, 1934, and has been in public health work since 1921, having served in Lenoir and Pitt.

Dr. Clifford F. West has been reelected president of the company operating Parrott Memorial Hospital, Kinston. Mrs. Albert DeK. Parrott was elected vice-president; Dr. Mercer C. Parrott, secretary and treasurer. Dr. Robert Glenn Tyndall of the staff was added to the directorate. The hospital was founded many years ago by Dr. James M. Parrott, who was secretary to the State Board of Health at the time of his death.

Dr. Victor H. Prusa, of Merrillian. Wis., has joined the staff of Grace Hospital at Banner Elk, N. C., as resident physician. Dr. Prusa is a graduate of the University of Iowa, and holds his M.D. from the University of Iowa School of Medicine.

Drs. Hedges, Woodward and Fitz-Hugh, Charlottsville, announce the association of Dr. F. Jason Crigler.

INHALANT No. 77

An Ephedrine Compound used as an inhalant and spray, in infections, congested and irritated conditions of the nose and throat. Relieves pain and congestion, preventing infection, and promotes sinus ventilation and drainage without irritation.

Description

Inhalant No. 77 contains Ephedrine, Menthol, and essentials oils in a Paraffin oil.

Application

Can be sprayed or dropped into the nose as directed by the Physician.

Supplied

In 1 ounce, 4 ounce and 16 ounce bottles.

Burwell & Dunn Company

Established *Pharmacists*
Manufacturing *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U.S. on request

The new wing of the WESTERN NORTH CAROLINA SANATORIUM completed in January, has room for 17 patients. With completion of the home for nurses, the capacity of the sanatorium will be 330.

DR. WILMER L. GRANTHAM and R. CARL BUNTS, Asheville, announce their association for the practice of urology.

DR. AND MRS. P. H DREWRY, JR., White Plains, New York, are spending some time in London after a visit to Dr. Drewry's old home in Petersburg.

DR. AND MRS. C C. CHAPIN, JR, Richmond, are on an extensive South American cruise.

DR. C. L. BITTINGER has moved from Statesville to Mooresville, where he has opened offices for the practice of his profession.

Our Medical Schools

MEDICAL COLLEGE OF VIRGINIA

In remodeling the Egyptian Building, which is not now fireproof and which has failed badly, the interior and roof will be removed to give place for a new treatment of the interior which will be fireproof. The exterior will also be restored to original condition. When the building is complete the first and basement floors will be utilized chiefly for a handsome auditorium done in the Egyptian manner which will seat four hundred. There will be a small stage with curtain, provision for sound projection, arrangements for presentation of cases for discussion, and many other attractive features. The upper floors with a section of the basement will be utilized by the departments of pathology and bacteriology, bringing the pathology department next to the new morgue and autopsy facilities.

The fourth floor of McGuire Hall, now under construction, will be utilized for the departments of physiology and pharmacology and will be very modern.

The ampitheatre adjoining McGuire Hall will be remodeled to be used as laboratories and related facilities for the department of anatomy.

It is anticipated that the Egypian Building, the fourth floor of McGuire Hall, and the new morgue and autopsy quarters will be ready by the opening of the session 1939-40.

The following members were recently added to the faculty: Dr. Emmett C. Matthews, Assistant in Medicine; Dr. Wellford Reed, Instructor in Medicine; Dr. Louis Kolipinski, Instructor in Neuropsychiatry; Dr. Thomas E. Painter, Instructor in Neuropsychiatry; Dr. Isadore Zfass, Instructor in Neuropsychiatry;; Dr. William Johns. Instructor in Surgery, and Dr. Herman Farmer, Instructor in Pediatrics.

DUKE

On January 18th a Symposium on Pneumonia was held at Duke Hospital, to which the members of the medical profession and technicians were invited. Dr. Frederic M. Hanes, Professor of Medicine, Duke University School of Medicine, gave a lecture on Pneumonia in Adults; Dr. Angus McBride, Assistant Professor of Pediatrics, lectured on Pneumonia in Infants and Children, and a moving picture on The Diagnosis and Treatment of Pneumonia was shown, furnished through the courtesy of the Lederle Laboratories.

On February 8th Dr. Joseph Stokes, Jr., Associate Professor of Pediatrics, University of Pennsylvania School of Medicine, lectured to the staff and students on Viruses, and on February 14th Dr. A. Bruce Gill, Professor of Orthopedic Surgery, University of Pennsylvania School of Medicine, lectured on Open Reduction of Congenital Hip.

UNIVERSITY OF VIRGINIA

Dr. Louis Hamman, Professor of Medicine at the Johns Hopkins Medical School, delivered the second Alpha Omega Alpha lecture for the session before the students and faculty of the Medcal School on the night of January 16th. He spoke on the subject of As Others See Us.

At the meeting of the University of Virginia Medical Society on February 6th Dr. Harry F. Flippin, of Philadelphia, spoke on Sul-Pyridine in the Treatment of Pneumonia.

On February 10th Dr. John Nokes addressed the South Atlantic Association of Obstetricians and Gynecologists on the subject of A Critical Analysis of Cesarean Section.

On February 3rd, Dr. John Moyer Meredith addressed the Rockbridge County Medical Society on the subject, The Diagnosis of Surgical Lesions in the Spinal Cord.

At the meeting of the University of Virginia Medical Society on February 13th, Dr. Philip Bishop spoke on Lipoid Pneumonia.

DEATHS

Dr. Joseph Thompson McKinney, 49, Feb. 3rd, after an illness of two months, at Roanoke. Dr. McKinney was a native of Reidsville, N.C., and a graduate of the University of North Carolina and of the Medical College of Virginia. During the World War he served with the McGuire Hospital Unit with the rank of captain. After the close of the war he made his home in Roanoke, where he was chief radiologist at the Lewis Gale Hospital.

THE POSITIVE ASSURANCE that vomiting of pregnancy will be cured on a certain day—say 14 days— in the future will be curative in the great majority of cases.

BLACKBERRIES, huckleberries, raw red meat red wine, bismuth, charcoal or iron may give the stools an appearance suggestive of bleeding.

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

BOOKS

SURGICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS, by ARTHUR E. HERTZLER, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas; Professor of Surgery, University of Kansas. 206 illustrations. *J. B. Lippincott Company*, Philadelphia, Montreal and London. 1938. $5.00.

This remarkable small-town general surgeon completes, with this volume, a ten-volume series on surgical pathology. He notes that specialists are more and more taking over this field and comments that the general surgeon will continue to see some of these cases when the specialists become timid and call in the general surgeon. Frankly he says of the papers cited as references: "If they are not good do not blame me. I have not read them." He says the laryngologists are more closely related to the general surgeon than are the dentists: "that is the former have the more surgical tools;" and "nowadays most laryngologists have their own artery forceps."

THE 1938 YEAR BOOK OF PEDIATRICS, edited by ISAAC A. ABT, D.Sc., M.D., Professor of Pediatrics, Northwestern University Medical School; Attending Physician, Passavant Hospital; with the collaboration of ARTHUR F. ABT, B.S., M.D., Assistant Professor of Pediatrics, Northwestern University Medical School; Associate Attending Pediatrician, Michael Reese Hospital. *The Year Book Publichers*, 304 S. Dearborn St., Chicago. $2.50 p.p.

The volume opens with an account of progress in the study of the endocrine glands. Only a few hormones are of therapeutic value, but these few are of great value. A case is reported of survival of a 2-lb baby which "would represent a baby from the 22nd to the 28th week of gestation." There are sections on the new-born, feeding, gastrointestinal diseases, infections, parasites, all the anatomical divisions, allergy, scurvy, rickets, eye-ear-nose-throat diseases and children's hospitals. Little of importance in the past year has been missed.

A postgraduate clinic on the diagnosis and treatment of syphilis will be held at Duke University on March 24th-25th, sponsored by the North Carolina State Board of Health and the University.

Principal speakers will be Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service; Dr. John H. Stokes, Duhring Professor of Dermatology and Syphilology, the University of Pennsylvania; Dr. Joe Earle Moore, Associate in Medicine and Chief of the Syphilis Division, Johns Hopkins; Dr. Harold N. Cole, Professor of Dermatology and Syphilology at Western Reserve; Dr. Paul O'Leary, Chief of the Section of Dermatology and Syphilology, the Mayo Clinic; Dr. P. C. Jeans, Professor of Pediatrics, the University of Iowa; and Dr. Norman R. Ingraham, Associate in Dermatology and Syphilology, the University of Pennsylvania.

Each of the sessions will be followed by round table discussions, led by North Carolina health officers and medical leaders. Dr. J. Lamar Callaway, of Duke Medical School, will preside at the opening session, with Dr. W. P. Richardson, District Health Officer, Chapel Hill, leading the round table.

Dr. William deB. MacNider; of the University of North Carolina, will preside over the first afternoon's session, and the round table will be led by Dr. Roy Norton, of the University of North Carolina School of Public Health, Dr. Carl V. Reynolds, State Health Officer will preside over the evening program, at which Dr. Parran is to speak. Dean W. C. Davison of the Duke Medical School will preside over the concluding session on the morning of the second day, and Dr. E. R. Hardin, Health Officer of Robeson County, will lead the round table.

WHEN THE CERVIX HAS NOT DILATED two finger-breaths at the second stage place on the patients tongue 1/8 gr. morphine and 1/300 gr. atropine. Tell her not to swallow it and let her know she will be relieved shortly.—*S. S. Smith*, in *Jl. Med. Assn. Ga.*, Jan.

EXTENSIVE and fixed malignant tumors of the thyroid are best treated by irradiation alone; the malignant adenomas and the papillary adenocarcinomas are more radiosensitive than the rapidly growing cellular types of carcinoma.—*Radiologic Review.*

PRIMARY right ventricle failure is manifested by engorgement of superficial veins, edema, visceral congeston, dropsies, scanty urine, accentuated P.2, low b.p.

THE characteristic symptoms of left ventricle failure is dyspnea without general edema.

Anal-Sed

Analgesic, Sedative and Antipyretic

Affords relief in migraine, headache, sciatica and neuralgia. Rheumatic symptoms are frequently relieved by a few doses.

Description

Contains 3½ grains of Amidopyrine, ½ grain of Caffeine Hydrobromide and 15 grains of Potassium Bromide to the teaspoonful.

Dosage

The usual dose ranges from one to two teaspoonfuls in a little water.

How Supplied

In pints and gallons to physicians and druggists.

Burwell & Dunn Company

Manufacturing Pharmacists

Established in 1887

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

CHUCKLES

A woman approached a postmaster and said : "I've been expecting a package of medicine for a week back, and it hasn't arrived yet."

"For a weak back?" asked the postmaster. "What do you take for it? I have a weak back myself."

"I'm not interested in your back," replied the woman. "What I want is my package of medicine."

"Very well," said the postmaster; "please fill in this form and state the nature of your complaint."

"Well," said the irate woman, "if you really must know, it's indigestion."

Constable: "Now, Miss, what gear were you in at the time of the accident?"

Scottish Lassie: "Oh, I had on my new dress I knitted for my sister. It turned out to be too small for her, so she gave it to me.

Doctor (to patient being discharged): "Have a good time and take care of yourself."

Patient: "Now make up your mind, Doctor; which do you want me to do?"

She was tremendous and when she sat down before the otolarynologist he gazed, fascinated, at her massive contours. A little distract b cause of his interest in her bulk, he observed her broad, calm face, her ample bosom, her broad proportions. Then he murmured absent-mindedly:

"Open your mouth, please. Now say moo."

Professor: "What is the most important contribution of chemistry to modern science?"

Student: "Blondes."

Doctor: "When do you sweat mostly?"
Patient: "When I have to pay a note."

"Why on a war diet?'
"Because all of your food goes to the front."

In the parlor a davenport stands,
A couple is sitting there
Holding hands.
So far, no farther.
But now in the parlor a cradle stands,
The mother is weeping and wringing her hands.
So far, no father. —*Mil. Med. Times.*

You can travel anywhere..any day... on the SOUTHERN in coaches at..

Round Trip Tickets

Good in Sleeping and Parlor Cars on payment of proper charges for space occupied.

PER MILE ➡ FOR EACH MILE TRAVELED

One Way Tickets

Good in Sleeping and Parlor Cars on payment of proper charges for space occupied.

PER MILE ➡ FOR EACH MILE TRAVELED

Air-Conditioned Coaches on through Trains

ENJOY THE SAFETY OF TRAIN TRAVEL

SOUTHERN RAILWAY SYSTEM

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., MARCH, 1939 No. 3

Chronic Pulmonary Infections and Their Systemic Influence*

J. C. Meakins, M.D., F.R.C.P., Montreal

THE more one studies disease the more one is impressed by the influence of anatomical and functional disturbances of one system upon others after a purely secondary manner. It reëmphasizes the fact that the animal organism is not made up of water-tight compartments which function independently but all integrated to a perfect symmetry. Any disruption leads to secondary effects which may not be recognized, but if so they may not be attributed to the proper original disturbance.

In my title I have used the term chronic infections. It would have been better to have been more general. One can not be too restrictive, as degenerative lesions may precede or follow infections of the pulmonary tissues, whether parenchymal, interstitial, or bronchial. At times it is impossible to be certain where the initiative lies. In the end it is usually immaterial. The pulmonary lesions themselves are important only in so far as they disturb respiratory function with numerous consequential but far-flung reversible and irreversible anatomical and functional abnormalities.

The principal immediate and obvious effects of chronic pulmonary lesions are to be identified with interference of respiratory function, namely, anoxaema and carbon dioxide retention. These lead to cyanosis of a deep bluish colour and dyspnoea on exertion, and even at rest in the more advanced cases. If the arterial or capillary blood be examined for its oxygen content there will be found an increase of reduced haemoglobin in proportion to the cyanosis. There will usually be found in addition a great increase in the carbon dioxide content and, what is also important, an increase in the CO_2 combining power of the plasma. This will be construed as an alkalosis unless its method and reason of production are appreciated. With progressive depreciation of pulmonary ventilation there is eventually an inability to remove carbon dioxide from the alveolar air. As a consequence there is an increase of the alveolar CO_2 and a slowly progressive gaseous acidosis which is compensated for by retention of alkali. Therefore, although the CO_2 combining power is increased, it is in response to a definite need. This would appear to be an excellent attempt on the part of the body to correct a perversion of function; but it is apt to lead us into mistakes if we are not careful. A few examples might be cited.

An elderly man who had suffered from chronic bronchitis and emphysema for many years required an abdominal operation following which there was considerable vomiting of highly acid material. It was considered probable that he had a paralytic ileus, and this probability was endorsed by our finding of a CO_2 combining power of 104 c.c. volumes per cent. But, it was neglected to be noted that his n-p.n. was normal. He received the usual treatment of this condition with ammonium chloride, gastric lavage etc. His second state was worse than his first. He developed intense dyspnoea approaching, as nearly as his inelastic lungs would permit, Kussmaul's air hunger of acidosis. It was also found that the CO_2 combining power was slowly increasing. The whole pattern did not make sense, the explanation was obvious when one forgot the diagnosis of paralytic ileus. Vomiting is not uncommon after an abdominal operation, and the gastric secretion in chronic pulmonary insufficiency is usually increased over what might be expected in elderly persons as an elevated level of CO_2 in the arterial blood is a stimulant to the gastric secretion of acid. The increased CO_2 combining power was compensatory to his pulmonary lesion and had nothing to do with the vomiting which was in a way a further compensation. The normal n-p.n. in the blood held the clue to the situation, as it undoubtedly would have been increased if the

*An Address delivered at Charlotte, N. C., Feb. 7th, as a feature of a Post Graduate Course, auspices of the University of North Carolina.

increased CO_2 combining power had been due to paralytic ileus. All treatment directed to this end was stopped and the patient made an uninterrupted recovery, but retained his pulmonary lesion and his apparent alkalosis.

It is not usual to encounter chronic degenerative lesions in elderly diabetics. The following is a case in point. An elderly woman was admitted with what appeared to be pronounced diabetes and chronic bronchiectasis and emphysema and all the ear-marks of an acidosis, but with considerable cyanosis. The blood sugar was 470 mgms. per cent; the urine contained a large amount of a reducing substance and there was a pronounced ketonuria; but the CO_2 combining power was reduced only to 45 c.c. volumes per cent. It is true that she had been taking an unknown quantity of baking powder but apparently not an excessive amount. The respiratory distress and ketonuria were out of all proportion to the reduction of CO_2 combining power. It was decided that the pulmonary lesion might have some relation to this, so treatment was that of a case of diabetic acidosis. Her symptoms rapidly improved and the CO_2 combining power rose steadily to 110 c.c. volumes per cent. Alarm was now felt that perhaps she had taken much more baking powder than we had suspected, but there were no signs to indicate an alkalosis. Her pulmonary lesion was now shown to be of a severe grade and the cyanosis persisted. Its presence on admission was the clue to the unusual blood finding as it is not to be expected in acidosis alone.

Further examples of where the high CO_2 combining power of the blood had been wrongly interpreted as to its cause might be cited, but I think these are sufficient to indicate its importance. There are other changes in the blood which are consequent upon these disturbances of pulmonary function, such as increase of sodium and decrease of chlorides, which need not detain us now as they are not of an order to lead to confusion either in diagnosis or therapy.

The deviations from normal of certain of the cellular elements, however, are of more importance than the attention they usually receive. The variations in the erythrocyte counts reveal a pretty balance between functional deficiency and sepsis. In those cases where fibrosis and emphysema predominate and sepsis is of secondary importance, a more or less pronounced erythrocytosis or polycythaemia is to be expected. It is now believed that this is due to stimulation of the bone marrow by anoxaemia. It is therefore analogous to the polycythaemia of high altitudes and that found in the cyanotic group of congenital cardiac defects.

In 1901 Ayerza drew attention to cases with a chronic pulmonary history who had marked general cyanosis and polycythaemia. These cases were supposed to be due to sclerosis of the pulmonary artery. It is extremely doubtful whether such a distinct syndrome can be established. To these symptoms may be added somnolence, vertigo, headache, haemoptysis, dyspnoea, and sometimes precordial pain. All these symptoms and signs may be encountered in varying degree in any diffuse pulmonary lesion such as general fibrosis, emphysema, silicosis, or widespread chronic infections or pneumonitis. They are the result of the anoxaemia, carbon dioxide retention and loss of pulmonary elasticity which are not specific for any single lesion.

These cases are often confused with primary polycythaemia, first described by Vaquez and later by Osler. Indeed, it is often difficult to distinguish them apart, particularly as in Vaquez's disease chronic pulmonary lesions are not uncommon. The principal differential sign is splenomegaly. This, however, is not a common clinical finding, although it must be found at post mortem to establish the diagnosis.

The prominent role of anoxaemia in the production of polycythaemia has led many to consider that it may be the underlying cause of primary erythremia. The bone marrow is practically the same in the primary and in the secondary types of polycythaemia. There is congestion and hyperplasia of both the erythrocytic and leucocytic blood-forming elements. It would be well at this point to draw your attention to the fact that many chemical substances may produce polycythaemia—such as sulphur, strophanthin, digitalis, sodium nitrate, radium chloride, pituitrin, pilocarpine, phosphorus, opium, nicotine, epinephrine, caffeine, arsenic and carbon monoxide. The last is quite important on account of the almost universal use of the internal combustion engine. There has been much discussion of the deleterious effects of what is called chronic carbon monoxide poisoning amongst garage workers and others similarly exposed. It is still open to question whether the inhalation of low concentrations of carbon monoxide causes any physical impairment. There is strong evidence to indicate that it does produce a tolerance to anoxaemia comparable to that acquired at high altitudes, and it is likely that a moderate polycythaemia helps to this end.

But such a polycythaemia is not devoid of functional embarrassment. The erythrocytosis leads to an increase in the blood viscosity and so adds an additional burden to the circulation which, through other factors, as it will be seen later, is already in

process of being impaired. The occurrence of anaemia probably results from exhaustion of the bone marrow or from destruction of erythrocytes.

There is another interesting and important disturbance of the skeletal structures for which an adequate explanation can not be offered from our present knowledge. I have reference to what is commonly called osteo-arthropathy in its various degrees. It is commonly held that the simplest type of this disorder is to be found in clubbing of the fingers and toes. Here there is a hypertrophy of the soft parts of the terminal sectors of the phalanges. It is due first to an increase of fat, then an increase in number and size of the capillaries with thickening of the interstitial tissues, until finally there is a mushroom-like formation of the bone which closely simulates that found in acromegaly. The ultimate development is found in a slowly progressive, ossifying periostitis beginning in the distal ends of the long bones of the forearms and legs, where it may remain; or the process may extend to involve practically all bones of the body. Finally, the joints may show erosions of the articular cartilages, periarticular thickening and an excess of joint fluid. The changes in the bones lead beyond the periosteum to sclerosis and thickening of the cortex and diminution of the medulla, with fatty degeneration, and impairment of haemopoietic function. These changes are not equally prominent in all cases and there seems little doubt that the cortical and medullary changes may occur without evidence of periosteal lesions. There seems little doubt that clubbing of the fingers is an expression of early osteo-arthropathy; but this is not always the case. There are now being reported an increasing number of cases where the former are found without any evidence of a pulmonary or other aetiological factor. These cases may occur as isolated instances, but more interesting are those which show a definite hereditary or familial history. We have traced such cases through four generations.

The cause of this condition is not known. It is, however, closely associated with two primary disturbances—1) chronic anoxaemia, 2) chronic sepsis. The best examples of the first are to be found in congenital heart disease of the cyanotic group, in those who sojourn at high altitudes, and in chronic emphysema with cyanosis and polycythaemia. In the second group the most prominent are bronchiectasis, empyaema, and lung abscess; but to them must be added subacute bacterial endocarditis, chronic amoebiasis and chronic biliary infection especially when jaundice is present. Tuberculosis was long thought to be a prominent cause but this is now found to be erroneous unless there be extensive secondary infection. Therefore, although tuberculosis may be relatively prominent through its secondarily infected fibro-ulcerative form, it may be combined with bronchiectasis and lung abscess to form by far the largest class. In pneumoconiosis it does not occur unless tuberculosis and secondary infection are present. Another feature often found in this condition is severe sweating of the palms of the hands and soles of the feet; otherwise all the accessory features can be accounted for by the primary pulmonary or other lesion. The exact cause of this condition is unknown but it is usually classed under the general category of toxic. This could be easily accepted as a hypothesis in the purulent pulmonary or other lesions but can not so readily be considered in the purely anoxaemic conditions. I would submit that there is a fundamental difference between the lesions in these two classes. In the purulent cases the periosteal lesions are the more prominent and frequent, while in the anoxaemic cases the peripheral vascular and bone marrow changes are particularly evident. We may therefore be dealing with two different but analogous processes. In spite of this it must be appreciated that clubbing of the fingers especially in its early stages is an important clinical sign, often overlooked, indicative of a serious visceral lesion. It may be reversible and therefore is of important prognostic significance.

Other interesting and important changes of the finger nails in chronic pulmonary disease, particularly tuberculosis, may be seen in curving either laterally or downwards, turning over the end of the tip. The latter is often found in clubbing but may occur independently. When combined it is very conspicuous. A rare phenomenon is the oyster-shell nail, first described by Hirschberg in 1911. The nails of the fingers and toes are distorted by ridges and craters and become brittle and loosened laterally and distally. This condition has been found with chronic pulmonary lesions, particularly tuberculosis. I have seen it in rare cases of bronchiectasis, in chronic lung abscess and in a case of benign bronchial tumor with honey-combing of the distal pulmonary tissue with minimal signs of infection.

The possible relation of these dermal, osseous and arthritic lesions to other forms of arthritic changes is intriguing. We must acknowledge that we do not know much about the latter. Simplification of the classification of arthritis has done much to clarify our concepts, but fundamental knowledge is still elusive.

The systemic signs of sepsis are well known and when the source is in the respiratory tract

there is no exception. There are, however, several points that are rather peculiar. It would be expected that in such a highly vascular tissue signs of systemic toxaemia would be profound. This is the exception rather than the rule. When it occurs it is recognized as to its source, but there are many more cases in which the true condition is not recognized. They are most commonly called chronic bronchitis or in others where there are definite exacerbations and physical signs as pneumonia. Either may be quite correct in a narrow point of view, but the true diagnosis is more likely to be bronchiectasis or pneumonitis due to a foreign body. It is not the local disturbances which first incapacitate the patient, but rather the general reaction which leads to general debility, anorexia, fatigue and anaemia with intermittent attacks of pyrexia even with chills and rigors. The importance of recognizing the condition early is that then is the time to institute adequate therapy. Lobectomy for bronchiectasis following measles or whooping cough in childhood can be carried out with comparative safety. A foreign body may be easily removed if its presence is recognized early. The most common cause of lung abscess is a foreign body, particularly following pharyngeal and dental operations. Postoperative pneumonia should never be a diagnosis until the presence of a foreign body and massive pulmonary collapse, either combined or independent, have been ruled out.

It might seem that emphasis on these points is not pertinent to the present subject; but it is from such beginnings that extensive pulmonary fibrosis gradually involves massive areas and interferes with respiratory function, when corrective measures are no longer possible except at great risk. Except where foreign bodies are the primary cause, and sometimes subsequently then, infections to which the individual is susceptible are the perpetuating cause. This is indicated by the frequent occurrence of asthma, migraine, urticaria and other allergic phenomena. In fact, after infections of the upper respiratory tract, these lesions of the pulmonary tissue are the most productive of bacterial allergy. The intradermal injection of suspensions of autogenous bacteria reveals a pronounced specific sensitivity. It is before anatomical changes have become pronounced that the best hope for nonsurgical treatment exists. Physical examination does not aid materially in recognizing these early parenchymatous and bronchial lesions. Recent advances have been made possible by the x-rays, bronchograms and the bronchoscope. One who depends upon physical examination alone is neglecting his duty.

As would be expected from their situation, these infected pulmonary lesions and also primary bronchogenic carcinoma shower their metastases into the systemic circulation. Therefore they are more widespread than from any other source, and as a consequence produce bizarre clinical patterns. My neurosurgical colleagues have taunted me that we do not recognize bronchogenic carcinoma as often as we should. This unjust criticism is prompted by the occurrence of an occasional case of multiple cerebral lesions which gives them much difficulty of diagnosis, as primary tumors of the brain are seldom multiple. When such lesions do occur, bronchogenic neoplasm should always be suspected until proven to the contrary. It might also be laid down as a rule that brain abscess unless due to trauma or local invasion from a contiguous lesion in the accessory basal sinuses, middle ear or mastoid, is a metastatic extension from a pulmonary lesion, no matter how obscure. The following case will illustrate this point.

A girl aged 17 was admitted to hospital suffering from a profuse haemoptysis. The family history was of no consequence. She had had measles and scarlet fever as a child and was reported to have been very ill with the former and to have been threatened with congestion of the lungs. The physical examination was normal except for some scattered moist râles in both lung fields and the x-rays revealed evidence compatible with haemoptysis. No local lesion could be found to account for the haemorrhage. Three days later she had a convulsion and during the next few days developed a right-sided hemiplegia and aphasia. Bronchiectasis had been suspected as the cause of the haemoptysis although it could not be located. This diagnosis was further emphasized by the cerebral symptoms as these were attributed to a metastatic brain abscess. An autopsy proved this to be correct and a small area of bronchiectasis in the left lower lobe with thrombosis of the pulmonary veins contiguous to it was the source of the infected cerebral embolus.

I have dealt so far with the effects of impairment of external respiration and infective processes as they affect the body as a whole. It is such a wide subject that I have been able only to touch on the high spots. I must now consider the influence of extensive fibrotic and emphysematous lesions upon the general circulation in the first place, and secondly, upon impairment of internal respiration in some of the more important systems.

Circulatory failure has long been identified as a sequela or complication of pulmonary fibrosis and or emphysema. It was claimed that this was due to dilatation and failure of the right ventricle with tricuspid insufficiency. In proof of this it was

claimed that cardiac hypertrophy was practically a constant autopsy finding. This was disputed by many. Parkinson has recently demonstrated by careful fluoroscopic and x-ray examination that, whereas there may be dilatation of branches of the pulmonary arteries and of the conus arteriosus, a small or normal-sized right ventricle is frequent, and hypertrophy is practically always associated with such lesions as mitral stenosis, rheumatic carditis, or other valvular lesion, hypertension and terminal Bright's disease.

The so-called emphysema heart is reported to "result from chronic lung disease—fibrosis, pneumoconiosis, emphysema, silicosis, asthma etc. It is often difficult to decide whether an associated right-heart failure is primary, secondary, or merely concurrent." In the latter part of this quotation is epitomized the doubt, and in the first part with loose synonyms is pointed the way to a solution. All of these synonyms have one point in common, namely, loss of pulmonary elasticity. In fact, here lies the principal factor in circulatory failure in chronic pulmonary disease. It is difficult in any given case of these chronic lesions to determine how much is fibrosis and how much is emphysema, either primary or secondary. There is, however, this one common factor. In what way does this interfere with respirato-circulatory function. It is needless to analyze the different possible factors as there are two of prime importance. The characteristic respiratory movements of these chronic pulmonary lesions are plain to see—the quick inspiratory movement followed by the prolonged expiration, obviously difficult, reinforced by the accessory muscles of expiration. The close observer at the same time notes the distention of the veins during this phase. Wherein lies the difficulty? The clue is found in the intrapleural pressures. Under normal conditions the intrapleural pressures are negative in both phases of respiration; but in the diffuse, fibroid pulmonary lesions, whereas the inspiratory negative pressure is increased, but of short duration, the expiratory phase is prolonged and the pressure is positive, even equal to or greater than the venous pressure. As a consequence, during the greater part of respiration the venous influx to the right auricle is practically obstructed, with increasing venous pressure and cessation of return blood flow. This eardily accounts for many of the circulatory phenomena associated with chronic pulmonary lesions such as increased venous pressure, dilated veins, enlarged liver, dependent oedema, retinal engorgement, venous thrombosis, pulmonary infarcts etc. It is not actual myocardial failure, although this may be present as an independent phenomenon; it is, really, venous obstruction. It has been shown that arteriosclerosis and other degenerative processes may be associated in a general physical depreciation.

Quite apart from sepsis and its consequences, it will be seen that two major impairments may eventually occur in chronic pulmonary disease, namely, anoxaemia with CO_2 retention and circulatory retardation through venous obstruction. These two conditions conspire to interfere with cellular function by forcing it to work at a lower partial pressure of oxygen. Up to recent years this was visualized to us by dyspnoea and fatigue. We did not comprehend, nor had we means to suggest, that other symptoms of disturbed function might be attributed, either directly or indirectly, to the same source.

The progressive loss of subcutaneous tissue and muscular atrophy have been observed by us all. Other tissues suffer in the same manner, particularly the gastrointestinal system. There is not only atrophy of the intestinal musculature but also evidence of impaired absorption. The abdominal distention from excessive fermentation points in the same direction. It is a complicated disturbance with many ramifications which have as yet been only superficially explored. It behooves us to pursue these leads to their end. Our science has prolonged man's life to an embarrassing degree, not only to the individual but also to society. Therefore it is our duty to see to it that this embarrassment is mitigated as far as it lies in our power. This can not be done by a mere factual anatomical diagnosis. Further disturbances must be prevented and this can only be accomplished when we clearly understand with what we deal.

A Letter to *The Recorder* of the Columbia (S.C.) Medical Society

Columbia, S. C., Jan. 26, 1939.

Dear Sirs:

Perusing medical literature on the use of urea in the treatment of skin diseases one might be led to think that this was something new.

It probably made the first skin lotion used by the human race .... I saw it used as such back in the late 80's .... by an ex-sailor, a French Canadian, on his own frost-bitten and chapped hands. His donor was a cow, and the results were superior to any I have ever seen for the cure of rough, chapped hands.

.... What is perspiration? Practically urine! And when you are perspiring your skin is being bathed with urea and the skin is soft and smooth. In winter the pores are closed tight ....

Yours for smoother, whiter hands.

A. E. SHAW, M.D.

Rest in bed, sedatives, humidity, baths, antipyretics and occasionally the use of aqueous solution epinephrine or ephedrine as a nasal spray make up the most promising means at our disposal for use in a common cold.

Address*

A Very Real Problem In Everyday Practice

Charles A. Hensley, M.D., Asheville, North Carolina

I WISH to discuss with you for a short while problem which, I am sure, warrants the attention of each one of us. The solution of this problem, to my mind, requires the majority of time and energy many of us spend in our offices each day. It is the problem of the patient who is without organic cause for his signs and symptoms, but who is quite sure that he or she has disease of some sort. A large majority of such patients are women, which makes the solution more difficult. One can not very easily tell a complaining woman there is nothing wrong with you, so go on and forget it. Rather, we must bring all the finesse, the ingenuity, the coaxing and light of considerate kindness and sympathy to these unhappy people, if we are to be instrumental in returning their happiness to them. And whose job is it? Certainly the specialist has no time for it, the surgeon is too busy and the psychiatrist is not available—nor is he in a position to give the time or apply the necessary eliminative procedures to make sure that the syndrome has no organic background. It is the very earnest job of the general medical man who must spare the time, who has the experience, and who can do such a volume of work as to adequately compensate him for maintaining such equipment that proper diagnostic tests can be made to help rule out organic disease.

The causes of such maladjusted states are extremely varied and complex. Each of them at some time in your practice has caused a mental sweat for its solution. To iterate their nature in detail is not within the scope of this paper. Mention of the most important causes will suffice:

Perhaps the foremost is *fear*, the most powerful of the emotions—elusive, but ever present to attack the imagination of these unfortunates. They are afraid of having the mysteries of their bodies explored. They fear an ominous verdict. They are burdened with fear of cancer, fear of childbirth, fear of syphilis, fear of sexual impotency, fear of economic difficulties. It is the fear of what the discomforts may portend that leads them to the doctor. A large part of the doctor's work is dealing with fear. The objects of fear are monstrous and endlessly long. Calling it worry and telling the patient not to do it, is not enough. Much more is at stake. The second most important cause is probably the result of those delusions and misconceptions often seen in the reaction from the cohabital relations of married life, and at the two physiological extremes of womanhood. Perhaps third in importance is the resultant of those unhappy misimpressions relative to diet, digestion, elimination, complexion and the absence or presence of the youthful figure. There are others just as difficult of solution and just as varied and complex.

An attempt at classification will not clarify the issue presented; the situation is much too complex and individualistic. Each patient presents a new and limitless problem—never explained in textbook, never met before, the solution calling upon the physician to exert all his intuition, foresightedness and good common sense. With such patients what is the procedure? What steps necessary for the solution of their problem? With your permission, I shall briefly enumerate the essentials: a thorough written history, a complete physical examination—including neurological determination and ophthalmoscopic study. This, if properly planned, should not consume more than 30 or 40 minutes. Blood count, stool examination and urinalysis should complete the preliminary work-up, with a cost to the patient of only a few dollars. With these data in hand, time should be taken for their correlation and evaluation. X-ray examinations, blood chemistry determinations, basal metabolism readings etc., can be decided upon when this is concluded. Such procedures should be carried out only when deemed necessary for arriving at a proper conclusion. This evaluation naturally assumes the importance of a differential diagnosis. Does the patient have organic cause for the symptom complex? Or is mere fancy the motivating factor in the trouble? Herein lies the sign for caution, the extremely thin ice on which we may blunder. To call the signs and symptoms presented merely the result of a pathological imagination, when they are actually due to some physical defect is inexcusable. Extreme care must be taken to avoid such pitfalls. The contrary is equally as

*Presidential address [illegible] the [illegible] Medical Association of the Carolinas and Virginia, meeting at Charleston, February [illegible], 1951.

bad. We must be as nearly correct as is humanly possible. To be mistaken may have grave consequences.

Should there be organic abnormalities which have even small bearing on the confronting situation, they should be corrected, for often such abnormalities produce grave functional disturbances. If this requires the attention of one in a specialized field he should be made thoroughly cognizant of the status of the case; this particularly so that he may aid as much as possible in the ultimate and correct therapeutic conclusion. Specific references here are not necessary as they are obvious to you.

Doubtless the most important undercurrent in the procedure thus far is the very valuable effect on the patient of a job well done. The physician who has handled the situation carefully and thoroughly, to this point, who has been painstaking and untiring in his effort, may already have accomplished unlimited therapeusis. That inevitable sense of confidence that the patient, and particularly the type of patient we are now concerned with, can get from a doctor who does his job thoroughly may well be a cure in itself. The final touch is for him to state that so and so does not exist, and for the patient, most likely will not exist.

What then concerning the mode of therapy providing the case can surely and safely be placed in the catagory with which this address is dealing? This must be specific from a subjective standpoint. To attempt psychoanalysis in its entirety confuses and weakens the issue. Rather, one should set about explaining away fears, sexual entanglements, and other reasons for symptoms, in clear-cut, understandable, everyday terms. The correct explanation for physiological function should be concisely given. And the beclouding cloak lifted from misconception and ignorance. The time and effort necessary to accomplish this depends upon the ability of the physician as well as the receptive attitude of the patient. Temporizing, or mental fondling, is poor therapy. Such treatment produces a fertile field for a new complex or new complaint. Every effort should be made to plan the therapy as effectively and concisely as that for hyperchromic anemia, for pneumonia, or for any other disease. Drug, dietary, exercise or other therapy may be necessary. These however, should be strictly subordinated to the more worthwhile and stimulating therapy of a less tangible nature. We should not become so intellectually slovenly that the patient soon believes the grandular or vitamin injection, which is of doubtful value at best, more important than the mental therapy which it is the heritage of every physician to give. Adequate attention should be given the slight anemia, the dietary needs—or the insignificant skin blemish; but too much weight should not be placed on the efficacy of our remedies. It is so easy to inject this or that grandular substance and forget our real duty and obligation to the patient. The excuse that we have to do something or the patient will go elsewhere is a poor screen behind which to hide our inefficiency. In this hey-day of the needle and syringe, many medicinals are being needlessly and expensively given to patients who can ill afford such measures, when proper mental therapy, of advice, kindness and sympathy, and a prescription for medicinals to be taken at home, would do a much better therapeutic job.

And what of the future of these patients? What can be the average prognosis? That depends more on the physician than on the patient. It is the physician's responsibility to watch over and guard the health, both mental and physical, of his patient. The functionally sick often require more time and patience than the physically ill. There should be some type of supervision, check-ups at definite intervals where the severity of the condition warrants. There should be cures, however, the number being directly proportional to the skill and interest of the physician. If those of us who are in a position to do so, performed this function as thoroughly and conscientiously as we work on a case of diabetic ketosis or pneumonia, let us say; the end result would be much less barbiturate, patent medicine and cult addiction.

ACCOUNT OF APPENDICITIS IN THE LANCET (LONDON) IN 1838

(From "The Lancet 100 Years Ago" in *The Lancet* of Dec. 10th, 1938)

From a paper read to the Royal Medical and Chirurgical Society by Dr. John Burne, physician to Westminster Hospital

The history of perforative disease of the appendix was then entered on. The author made some remarks on the diagnosis between spontaneous tuphlo-enteritis and that occasioned by disease in the appendix, in which he held that, in the former, when the bowels were relieved, amendment usually followed; whereas, in the tuphlo-enteritis from diseased appendix vermiformis no such benefit could be expected to follow purgation... The author concluded by an analysis of 21 cases of tuphlo-enteritis that had fallen under his own observation. Of these patients eight died. Nineteen were acute.... Six were instances of perforation of the appendix, of which five were fatal. One was perforation of the calcum from within, and recovered; one was inflammation of the appendix, with peritonitis, and was fatal.

A STUDY made by Drogsted, Chicago (*Northwest Medicine*, Feb.), indicates that there is in fresh pancreas a substance which has to do with the transport or utilization of fat, which is probably a hormone, and to which the name lipocaic has been given.

A Plea For Socialized Medicine*

Karl Schaffle, M.D., F.A.C.P., Asheville, North Carolina

COMRADES! "Kamarad" it might be before the evening is over! But, while there may be no members of the Socialist party among you, this form of greeting should be appropriate, as, while we may differ in our views on various subjects and, particularly, on the one assigned for discussion tonight, we are still brothers in a profession which has always been dedicated to the welfare of mankind. It is important at this time that we avoid bitter or personal feeling among ourselves and try to examine the matter before us with the cool, detached or objective point of view, which characterizes the scientific attitude. It is of still greater importance that our expressions as a whole, whether representing this particular society or the profession at large, should preserve the masterly calm or imperturbability which Osler once stated to be the greatest attribute of the physician, particularly in times of stress. Violent opposition by medical men, to socialized medicine, both in Germany and England, resulted merely in the alienation of public opinion and in their exclusion from participation in the planning of the systems which were adopted by those governments.

Looking into the history of socialized medicine, we are commonly informed that it began with Bismarck, in Germany, in 1883. But there were forms of grouping together of workers, in order to minimize their individual losses by sharing them, among the guilds of the Middle Ages and even prior to that, during Roman times. If I may be permitted a personal reference, Dr. Albert Schäffle, Professor of Political Economy at Tübingen and Vienna, a cousin of my father's, elaborated a scheme of social insurance for Germany as early as 1867. Bismarck acquired his ideas from Lasalle, a Socialist whose genius he recognized, and established such ideas as law, in order to satisfy the impoverished laboring class in his fight against the Social Democrats. In the half-century since that time, every wage earner has been insured against sickness, injury and death. Of course, I know nothing of the present outrageous regime, except that the Naturopaths have been put on top. In 1911 Lloyd George, who attributed 30% of Great Britain's pauperism to illness, introduced sickness insurance in England after a careful personal study of the German system. Like Bismarck, he had his political reasons — the conciliation of the Labor Party, which was developing considerable strength — but the results were good, regardless of the motives. Immediately thousands of English physicians, in spite of their previous objections, "climbed upon the band wagon." These two countries, which have been referred to most frequently, were followed by so many others, that now practically all of Europe conducts its medical care under similar or improved programs. The Scandinavian countries have set a brilliant example and as recently as 1930 France has adopted a plan, after study of the virtues and defects of the other countries, which is probably the most comprehensive in the services supplied and most satisfactory to both patient and physician in preserving the usual relation between them.

Russia is the only country in which actual State medicine is practiced in the sense that all physicians are full-time, salaried employees of the State and serve all of the people. But there, even before the revolution, in the time of the Czars, this government service by district physicians appointed to cover large tracts of sparsely populated territory was highly praised for its efficiency and *esprit de corps*. A similar body has been employed to serve the Highlands and Islands of Scotland. Of all the 30 to 40 countries which have adopted socialized medicine in one form or another, none of them has given it up, although some of these countries, like the United States, have indulged in the "noble experiment" of liquor prohibition and like this country, have given that up. In most of these, the plan consists of sickness insurance, shared by worker, employer and government, to cover various medical services, voluntary in a few countries, but compulsory in the great majority. Germany and England found that voluntary insurance against sickness would not succeed, in spite of vigorous efforts made to induce wage earners to subscribe to the plan. The thrifty, well-paid workers protected themselves in various friendly societies, while those receiving small wages were able to pay for only the bare necessities and insurance against illness was beyond their reach. Denmark and Sweden had similar experiences with voluntary insurance systems. Compulsory State-subsidized plans were resorted to finally to protect those who suffered most and were least able to afford service. In each country the physicians who participate receive a regular remuneration according to the amount and type of service ren-

*Presented to the Buncombe County Medical Society, Asheville, Dec. 5th, 1938.

dered. In some this constitutes 80% to practically full-time, in others 50% or less, with opportunity for private practice.

Our latest and most comprehensive news comes from England, through the recent publication of the observations of Dr. Douglass W. Orr, a graduate of Swarthmore and Northwestern, who is chief of the children's service of the Meninger Clinic of Topeka. He, with Mrs. Orr, an experienced social worker, went to England on the Barnett Fellowship and with no preconceived ideas. They had many extensive, personal interviews with physicians, both in and outside the panel system. Among their first discoveries, through the secretary of the British Medical Association itself, was that too many accounts of the British system of health insurance, appearing in the United States, have been written by American specialists who have spent a few days or weeks in London, talking with English consultants. But consultants do not participate directly in the plan and usually have little knowledge of it; also that the London correspondent of the *Journal of the American Association,* upon whom organized medicine in the United States has largely depended for facts, is a man of over 70 years who has not been a member of the British Medical Association for at least 30 years and is hardly known to leaders of organized medicine in England — which may explain why American doctors are usually certain that health insurance in England has aroused general antagonism if it has not entirely failed and why it is such a surprise to us to learn that there is all but universal agreement in England that the system has proved most satisfactory to doctors, insured persons and the public. This confirms the report of a committee of the Michigan State Society, which visited England in 1933. This book, *Health Insurance with Medical Care,* which time forbids reviewing here, as profitable as that would be, is enlightening in clearing up an accumulation of gross misrepresentation and should be required reading for all who discuss this subject. Suffice it to say that the people have received more care and the doctors more pay, (in many instances 50% more), and that measures are now under way with the initiative of the British Medical Association to extend the provisions of National Health Insurance.

Among the criticisms of such measures are claims that they cause malingering, unnecessary prolongation of treatment, corruption of doctors in padding their lists and signing certificates, mediocrity, hurry and carelessness, loss of prestige,—the doctor is only an employee.

Of course, we are dealing with human nature. I remember, as an interne, being ordered to use the actual cautery on the backs of foreign mine and railroad laborers, who persisted in occupying the hospital beds after their disabilities had been cured, in order to continue their benevolent society or union benefits. I also remember that at that time hospitals were infested by particularly loathsome creatures known as claim agents, who made their appearance immediately after an industrial disaster and tried to get its victims to sign away their claims for small sums, often before they were really conscious. These evils have been largely overcome by The Workman's Compensation Act, which was introduced as far back as the administration of the other Roosevelt. You may recall the opposition to this on the part of corporations and surgeons, but it soon subsided when the former found that they were actually saving large sums of money as compared with the adjustment of claims for damages; and the surgeons, after grumbling at filling out forms, have been better satisfied with the assurance of definite remuneration according to an established fee schedule. Out of this has grown the much needed Safety-First Campaign.

As to being servants of the State: aren't we all that now in many respects—the signing of birth and death certificates, vaccination of school children, reporting of contagious diseases, commitment of the insane and the filing of narcotic inventories? Those of you who are so fortunate as to be consultants to the very wealthy may have had the embarrassment of realizing that, to them, in spite of your poise, or "front" or bedside manner, you are only a grade or two above their houseman, valet or chief gardner. As a fashionable practitioner of Philadelphia said to me years ago, "Don't let your son become a physician. If he does, some morning at 2:00, after working hard all day in clinics for the poor and for some private patients, half of whom will never pay, and possibly teaching in a medical school simply for the glory of having his name in the catalogue, he will get a call from the second maid of Mrs. Vere de Vere, asking him to come at once to see James the butler, who has had a drop too much—and he will go—like a damn fool!" I remember an experience in one of the few such opportunities I have had. A man who was in the habit of going on a thousand-dollar jag every three months, was evidently suspicious of his gay, spoiled wife and proceeded to dictate the time of day or evening in which I was to make my visits. It was twenty-five years ago but seems like yesterday! I told him that I made my calls in the order in which they were received and that at times I might be delayed by emergencies, also that I had never particularly enjoyed the visits to

his house: that there was a woman upstairs who was quite ill, for whom he should get another doctor at once because as far as he and I were concerned, from then on he could go to hell! I then picked up my bag and walked out with as much stately deliberation as a skinny youth with a scraggy mustache could muster—but my, what a decompensation of the pocketbook.

Now, as to mediocrity: Was Koch, Loeffler, Gaffky, Laveran, Beaumont, Gorgas, Wood, Reed, Carroll, Lazear, Sternburg, Ricketts, Craig, Nicholls, Goldberger or our own Montgomery mediocre? I happened to be a neighbor of Dr. Goldberger's for several years and have known no one to work harder—nights, holidays, Sundays, giving up his accrued leave and with a large family and the salary of a major, he refused persistent and lucrative offers by the large yeast companies to allow his photograph or statements to be used featuring his discovery of the pellagra-preventive vitamine of yeast. As for Montgomery, we know that he wrote his last two articles on the accoustics of the chest while flat on his back and was writing the day he died. You may say that these men were geniuses who would have achieved fame under any circumstances or at least that they were experts in research and don't fit into the picture before us, which chiefly involves the general practitioner. Well! we need go no further than to the members of this society, who are serving in our adjacent Federal and State institutions. We need no better example of earnest activity in behalf of the patients in whom they take a close, personal interest and a constant effort to keep abreast of progress in medicine, surgery and pathology. On the other hand, you have all known private practitioners who were too lazy or incompetent to do their full duty by those who paid them or who, after a preventable death, have piously assured the family that "the Lord took him."

Doubt has been expressed as to the need for any form of socialized medicine, some very good men have said that there is no emergency. Let us consider first if there is a need on the part of the people and then on that of the profession. A number of investigations have been made toward this end, probably the most important of which was that of the Committee on the Costs of Medical Care. As six years have elapsed since its activities were completed, most of which you may have forgotten, I shall place them before you, boiled down to the essence.

The Committee was a voluntary organization of 50, composed of physicians in private practice, public health officers, executives of certain institutions, statisticians, social workers, nurses and the public. Such names as Lewellys Barker, W. S. Rankin, Haven Emerson, C. E. A. Winslow, Ray Lyman Wilbur, Olin West, Louis Dublin, Michael Davis, Homer Folks, Morris Cooke, Edgar Sydenstricker, Elizabeth Fox and Mary Roberts should command respectful attention. Appointed in 1927, after extensive research and discussion over a period of five years, they stated in a series of publications, among other things, that 177,000 physicians and dentists, with some 900,000 others at an annual expense of $3,647,000,000 so distribute their services that those in the lower-income groups, while suffering as much or more sickness, receive far less medical service than those with a greater income; also that there is a lack of preventive health care; indeed "niggardly appropriations for public health work" and that 50% of the families in the United States have incomes of less than $2,000, which means that less-than-average charges for medical services are more than many families can bear;" but concluded that no solution to the cost of medical care can be reached through a reduction in the average professional income, which is none too high to attract a high type of practitioner. The Committee estimated that all medical care of the kind which people customarily purchase individually could be provided in urban regions at least, at a cost, excluding capital charges, of 20 to 40 dollars per capita, per annum.

So far, there was general agreement among the members, so that while they differed, as we shall see presently, as to the measures to be taken for its solution, they admitted the presence and gravity of the problem. In 1932, they drew up their conclusions as to action, in a final report consisting of a majority and two minority opinions. The former is briefly as follows:

"That medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and other personnel, organized preferably around a hospital, for rendering complete home, office and hospital care, with the maintenance of high standards and the development or preservation of the personal relation between patients and physicians; the extension of all basic public health services, so that they will be available to the entire population according to its needs and that the costs of medical care be placed on a group payment basis, through the use of insurance, taxation or both these methods, and that the coördination of rural with urban services receive special attention. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Compensation for wage loss, due to illness, should be separate and distinct from medical services."

The committee then recommended as a solution—"the development of types of organized or group practice that will more effectively and economically meet the community's medical needs; the distribution over a period of time and over a group of families or individuals, of the

cost of service, and provision for the planning and coördination, on a local and regional basis, of all the health and medical services."

with the conclusion that

"the keystone of the concept of a satisfactory medical service for the nation, is the development of one or more non-profit community medical centers in every city of approximately 15,000 population or more."

In the first minority report the objections to the medical center plan are summarized as follows:

"(1) It would establish a medical hierachy in every community to dictate who might practice there. (2) It would be impossible to prevent competition among the many such centers necessary for large cities; cost would inevitably be increased by the organization necessary to assign patients to the various centers. This would add to the evils of medical dictatorship those of a new bureau in the local government, with its attendant cost. (3) Continuous personal relationship of physicians and patients would be difficult if not impossible under such conditions."

The minority group endeavored to show the great danger and evils in insurance practice which must be set over against the advantages of distributing the costs of medical care by this method and recommended that—

"government competition in the practice of medicine be discontinued and that its activities be restricted to the care of the indigent and of those patients with diseases which can be cared for only in government institutions; to the promotion of public health; to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey and other government services which because of their nature or location can not be served by the general profession, and to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases, and that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden; also that united attempts be made to restore the general practitioner to the central place in medical practice; that the corporate practice of medicine, financed through intermediary agencies be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession, and that methods be given careful trial which can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice. Finally, it recommends the development by state or county medical societies of plans for medical care, which place responsibility for the medical care of the entire community on the organized physicians of the community and assures freedom of choice of physicians, with payment by every patient with income, of a certain minimum amount before the insurance is in operation, the minimum to rise with the patient's income."

This last provision was designed to avoid abuses of other types of insurance practice but you will note that by its inclusion even the minority group favored sickness insurance. The second minority report was signed by the representatives of dentistry and is largely similar to the first, except that—

"the method of payment for medical service need not interfere with the highest professional standard or the personal relationship between practitioner and patient and that compulsory health insurance under professional control would eliminate the objectional features."

To boil down the essence, the committee found that too many people were deprived of medical service for economic reasons and that too many physicians were underpaid. It is believed that a redistribution of medical expenditures would by the adoption of voluntary health insurance correct both these evils. This report gave rise to much discussion from economic and sociological as well as medical angles and was probably responsible for a provision for health insurance in the Social Security Act, which was later deleted, partly by pressure from the American Medical Association.

The government itself then undertook a series of surveys, chiefly through the U. S. Public Health Service, with funds from the Works Progress Administration. These largely confirmed the findings of the Committee on the Costs of Medical Care,—chiefly that one-third of the nation was ill cared for by organized medicine. The figures presented in the various reports of such surveys have been so startling that some persons have questioned their accuracy. While I was not among these, as I have had some experience with statistical methods, I took the opportunity of writing to a friend of mine, who happened to be one of the investigators in the national health survey of 1935. He replied that—

The question of reliability might be examined from three points, that of the enumerator or data-gatherer, that of the schedule itself, and that of the statistical methods used in treating the data. The enumerators were drawn from relief rolls, trained for a week in the objectives of the survey, the schedule used in recording information, the method of approach, questioning and closing the interview. Repeated quizzes on studied material were given to insure that every enumerator knew the technicalities of his duties before he went into the field. An effort was made to have each interview as uniform as possible. In addition actual practice field work was done by each enmuerator in filing schedules on families which lay outside the sampled area. The effort was made to keep the study fool-proof as far as the enumerator was concerned. The schedule comprised some 52 items, made up in such a way that symbols could be largely used in indicating answers to questions. There were many internal checks of consistency in the question form itself. When a schedule came in it was carefully gone over by special workers in the local office who examined it for internal consistency. Any error was caught at this point and sent back into the field for correction by the enumerator who took the schedule. When it was brought again by the enumerator it was again checked and finally checked independently by a second worker. Having passed these checks it was shipped out to the central office where it was put into coding machines and then into Hollerith machines."

Among the questions asked were: Was there illness during the past 12 months of any member

of the household of more than three days duration? Number of visits by a doctor? Hospitalization? There were also inquiries as to occupation, income, amount of rent etc.

Still another investigation of major importance was that of the American Foundation, which was established a few years ago by Edward Bok, and has been devoted to the study of trends in government. After a review of international relations and the internal conditions of various countries, the Foundation concluded that the most important consideration is:

"The nature and degree of service in many fields, which. government, whatever its form, attempts to and does render its citizens. If it could first be established what a government could or should do for its citizens. then it would become much simpler to determine under what form of government this could most effectively be done."

Accordingly, it was decided to investigate the degree to which government may wisely serve its citizens in various fields such as industry, trade, currency, communications, taxation, education and health. A technique was used by which the specially interested groups actually conducted the research, with the Foundation assembling, checking, evaluating and summarizing the findings. This was done in the health field by questionnaires relative to the organization of medical care, which were sent to a representative list of physicians who had been in practice over 20 years and to graduates of less than five years recommended by the Deans of 67 grade-A medical schools, with attention to geographic distribution and representation of all divisions of medicine. The chief inquiry was—

"Has your experience led you to believe that a radical reorganization of medical care in this country is indicated? If so, in what direction? If you do not believe that radical reorganization is indicated, what, if any changes or revisions in the present system would you like to see made?"

The 5000 replies are digested in the two large volumes published last year and the results were, roughly—that adequate medical service is not now available (too many states and areas were cited where the need was sharp and clear, too many factors unsatisfactory, to justify a complacent conclusion that there is no problem), that the cost is too high; that social change necessitates corresponding evolution in medical care and that group practice, with qualifications, as an expression of the consultative principle and providing a better quality of service at reduced cost is a desirable development, and that the doctor-patient relation has been exaggerated. However, the combining of the business side with the scientific work in private groups was regarded as dangerous. Like the Committee on the Costs of Medical Care, the Foundation described numerous experiments by state, county and municipal organizations. The majority was opposed to state medicine and health insurance, especially compulsory, fearing the cost, the lowering of professional standards and the possibility of malingering—but there was little objection to the voluntary form. The testimony of physicians in contract practice was that it was useful if the right men were employed. Finally, it was held that—

"a full development of both preventive and curative aspects of modern medicine makes necessary an integration of the public health services with private practice, neither of which can reach their ultimate development alone; that tax funds should be allocated to hospitals in proportion to the care they furnish the indigent; that the facilities of tax-supported laboratories be extended; that the government assist medical education in the interest of better personnel and that it support research as the heart of both preventive and curative medicine."

So much for the larger picture. What of our local situation? We have a population of 100,000 in this county, half urban and half rural, with one health officer for each, whose duties are sufficiently comprehensive in purely preventive functions as to preclude treatment of the people, if that were desirable. We have a city clinic; but those living outside the boundaries are not eligible even though there are certain parts. such as Woodfin, where illness and poverty prevail, which are closer to the clinic than certain portions of the city area. There are also parts of town, like the Westend section, where people are sick in bed and can't go to the clinic. In addition to attending such patients, with occasional ruination of tires and fenders and the expenditure for gas and oil, there are many contributions of time and energy by anesthetists, surgeons, radiologists and others in the hospital, so that we can truly say that for many of us every day is community-chest day. As to the white-collar class, I had a good example of the unnecessary cost of care from a friend who needed attention to an ingrowing toenail. He inquired of a general hospital in another city of this state for the cheapest accommodations in a ward for one night and was informed the charge wauld be $16.50, or $19.00 for the first two nights, including the use of the operating room. if needed. He called his doctor, who advised him to enter as an out-patient and just pay for the use of the operating room, which he did, at $7.00. He has not yet paid the surgeon, who used an assistant and two nurses, all wearing gauze masks; but he is taking out hospital insurance. In the days of the good old country doctor, such a job would have been done in the office for fifty cents or a dollar.

The conditions mentioned locally and generally, while chronic, so that unfortunately we have become used to them, really constitute an emergency.

It is not so dramatic as a big epidemic, but it is just as vitally important. Disability and death are occurring a little more slowly and less spectacularly, that's all. Which reminds me of the affair of 1918, when I was in charge of the Pittsburgh district for the Pennsylvania Department of Health. Doctors were leaving the same office building to go across town, three miles, to see influenza patients in the same block, leaving hundreds in the blocks between to die without attention. The situation was not met until the area was subdivided among full-time volunteer physicians, enlisted temporarily by the United States Public Health Service, at small definite salaries.

Having considered so far the needs of the people, let us turn in more detail to the status of the profession. What of you and me? How much are we underpaid? Again we do not have to step outside of this room to find that complaints are general and that our practice for the past several years has developed a strong resemblance to the "old gray mare." At 25 we wanted to do something for humanity; at 50 we wonder what humanity is ever going to do for us; and, humanity being what it is, the answer is obvious.

In 1929, the last year of the boom, the average income for the 142,000 practitioners was $5,300. The 28,000 specialists averaged slightly over $10,000 but the median incomes for all physicians was $3.800, with 25,000 general practitioners getting less than $2,000 a year, about one-half less than $3,100, nearly one-third less than $2,000 and about one-sixth less than $1,200. If that was the case then, what must have been the condition of recent years? Several hundred doctors have been reported as on relief. Yet in 1929, $3,656,000,000 was spent for medical service, or 30 dollars per capita, about 4% of the national income, which should have been enough, minus certain wastes. At the same time the country spends $360,000,000 each year on patent medicines and pays $125,000,000 to osteopaths, faith healers and the like.

While inertia, opposition to change, confusion from contrary notions as to remedies and discouragement from the adverse comment of the editor of the *A.M.A. Journal* and his followers toward reform, have conditioned the attitude of most of us, a body of eminent men headed by our recent distinguished guest, Dr. John Peters of New Haven, became sufficiently dissatisfied with the general trend of thought, or the lack of it, that last year they formed themselves into a committee, which has grown and is now incorporated as the Committee of Physicians for the Improvement of Medical Care. Originally they had served as consultants to the American Foundation and recognized its problems. They issued certain principles and proposals for the solution of such problems, which were submitted to this society some months ago. These have been summarized in their latest analysis, that of November 26th, 1938, as: (1) That governmental health services should be consolidated. (2) That experiments in coöperatives and non-profit group practice should be encouraged. (3) That standards of administrative and professional competence and conduct be established and maintained. (4) That generous provision be made for investigation and education. They indorsed the National Health Program, presented in July before the National Health Conference in Washington, by the Technical Committee of President Roosevelt's Interdepartmental Committee to Coördinate Health and Welfare Activities, which calls for an expenditure of $850,000,000 a year for 10 years. Evidently the committee had considerable influence in effecting a marked change in the attitude of the House of Delegates of the American Medical Association, at its special session, in September, which adopted some of the measures advocated by the Committee and previous progressive groups, except that of health insurance and the improvement of the quality of medical care.

Out of all this mass of investigations, reports and discussions, it is hoped that the national consciousness will evolve the idea of Health First.

After this exhaustive, and I hope not exhausting, recital, it is very refreshing to close with one particularly brilliant and satisfying discovery. The brilliance is not mine but the satisfaction is. Did you know that long before the "new deal" was dreamed of, an honored member of this society, in the midst of his life work and with, I hope, many more years still before him, advocated health insurance at the annual meeting of the North Carolina State Medical Society in 1917. I refer to our own Dr. Joseph Greene, whom I think you will agree is the Dean of the local profession. If you turn to the transactions of our State Society of 21 years ago, you will find that he quotes his observations while in Germany and England, a few years previously, with unqualified approval of what he saw there. He also speaks of the humiliating position of the English profession in having had to accept the law which they had openly opposed. He goes on to compare the advantages of the Workman's Compensation Law with an act that was then pending in the Legislature for health insurance. He then states that it seems wise to require the employer to pay two-fifths of the cost of insurance, the employee two-fifths and the state the remaining one-fifth, to include all workers with an income of less than $1,200 a year. He con-

cludes by trusting that the medical profession will view the proposed law with a friendly attitude as he was convinced that its enactment would mean much for the social and health conditions of our people. As a result of this paper, Dr. Greene was appointed by the President of the society, with Dr. Rankin who was then state health officer, to a commission for the study of social insurance as it applies to North Carolina. This activity was precluded by the World War.

After watching the conscientious struggles with the evils of capitalism by both Hoover and Roosevelt for the past 10 years, and noting that there are still millions apparently permanently unemployed, with resultant poverty and invalidism, I would prefer an entire change of our economic system, according to the principles of Norman Thomas. This would include the adoption of state medicine for all the people, to be conducted by full-time physicians under a health officer in the Cabinet (with access to complete equipment) chosen by well-qualified examining boards and kept progressively scientific by periodic training and travel leave, with the maintainance of a high *esprit de corps*. Under the present competitive system, with its train of high-pressure diseases and increasing insanity, I would suggest state medicine for the indigent, compulsory health insurance for the workers and their dependents and *laissez faire* for the wealthy.

Cod-Liver Oil and Vaseline Treatment of Burns

[illegible] Toledo, O.

Following the original work of Lohr (1932) the Smithdown Road Hospital in Liverpool began to use cod-liver oil in the treatment of minor burns, extending the treatment to include major burns, and found the results gratifying. It promoted more rapid healing with no scar formation, no pigmentation.

Inoculating cod-liver oil with staphylococcus aureus inhibited the growth of the organism.

When first seen, no attempt is made to clear or debride the burned area beyond a light washing with cold boric acid in the dirtier cases. The burns are immediately dressed with cod-liver oil 60%, vaseline 40%, to which is added a small amount of tincture of myrrh. The mixture is spread on sheet-wadding, such as is used in applying padded plaster, and applied to the burn. Then circular bandage of two or more thicknesses of sheet-wadding and over this one layer of crepe paper. Gauze bandage completes this relatively non-permeable dressing. Immediate relief is experienced by the patient.

For several days the dressing is changed daily and then only every 3 or 4 days. The raised bullous areas are opened, the dead skin peeled away and the transudate removed, since its presence would prevent contact of the granulating surface with the cod-liver oil and provide a culture medium for any organisms, although no infections are seen in burns receiving this treatment.

Contractures, subsequent plastic surgery and the additional morbidity so often occasioned by burns are prevented by this method of treatment, with utilization of plaster casts, the member being put up in extreme extension, the cast is removed and a fresh dressing and cast applied at intervals of a week or longer. Most patients are ambulatory after the initial acute phase has passed.

Severe cases receive treatment to combat shock and prevent toxemia. Morphine in adequate amounts in the more severe and acetylsalicylic acid and codeine in the less severe [illegible]

The fluid balance is maintained at an adequate level. Daily or tri-weekly red blood cell and hemoglobin determinations and urinalyses are made. A red cell count and hemoglobin value higher than normal is construed as indicating dehydration and the fluid intake is increased in adults to from 4,000 to 5,000 c.c. per day, mostly by mouth, but in severe cases in shock or those which appear toxic 10% glucose in distilled water by vein and 2½% glucose in normal saline by hypodermoclysis are given.

In shock coramine has been found to be invaluable.

As soon as possible the patient is given a high-protein, high-caloric diet, rich in vitamins.

In the early severe stages bicarbonate enemata are given to aid in elimination and alkalinization. Later, mild catharsis is employed to make sure of regular elimination.

Patients are encouraged to exercise fingers and toes to aid circulation and to prevent atrophy from disuse.

[illegible] Intestinal Infestation More Serious Than Is Generally Believed

[illegible] Louisville in *Journ. of the A.M.A.*, May, 1937

The parasite makes its domicile with equal adaptability in most any of the abdominal organs, in the blood vessels, lungs and windpipe. When the parasite has entered through the skin a reactionary redness of the skin begins within 24 hours at the site of entrance, increases in degree for 24 or 48 hours.

In the digestive tract, whether reached by the skin-lung route or by direct conveyance to the stomach and intestine, the clinical picture varies from no disturbance to severe, even fatal diarrhea.

The diagnosis must be made through laboratory identification. A sure way to diagnose the condition is to study the duodenal fluid.

Riddance of infestation is not assured unless carpets and rugs are dry-cleaned or exposed to the sun's rays for several days. Wearing apparel not damaged by heat should be boiled; other garments dry-cleaned, floors scrubbed with soap and water. The floors of cellars and out-buildings, if earthen, should be covered with lime; if wood, scrubbed with soap and water. Household pets should be killed or [illegible]

Examination of every member of the family should be searchingly done. It does not seem reasonable to conclude that the family will escape after one member becomes [illegible]

Iodine has been found the most satisfactory agent for the removal of the worms from the system. A saline purgative is given an hour before supper. Breakfast is withheld. A duodenal tube with Lyon metal bulb is introduced, stomach irrigated and tube passed on into duodenum. Duodenal contents are aspirated to lessen dilution. 1 drachm of comp. iodine sol. given through tube and tube withdrawn. Repeat on alternate days until neither duodenal contents nor feces contain ova, parasites or larvae.

It is well to be familiar with the facts about worthless "cures," so as to be able to tell inquiring patients how they have been tried and found wanting, rather than that you knew nothing about them.

Sound Health for Our Commonwealth*

Roy F. Roberts, M.D., Asheville, North Carolina

SEVERAL years ago the idea of Socialized Medicine for the United States was obviously ridiculous to everyone. Today the idea is either ridiculous or a godsend, depending on the speaker. Let us review the facts with an open mind, inspired by the desire to be of help to your patients and to my patients, and let us cast aside for the time being the axe-grinding quotation of doubtful and opinionated statistics,—many of these figures tainted by some "specialist in other people's business," and deserving as little respect as any other low form of gossip. What do we find:

Some six years ago, a self-appointed Committee on the Cost of Medical Care after spending a million dollars, brought in a report that seemed to favor socialized medicine. Incidentally, the headman in this so-called survey had written a book supporting the conclusions of the Committee before the Committee did a lick of work. The minority report, which has apparently been obscured by the subsequent accumulation of twaddle, cast aspersions upon the majority report of this committee, imputed to it Communistic and Socialistic motives, while some of the members felt that socialized medicine would be used as the "door opener" for more generalized Socialism or Communism.

A wave of propagada followed, and enough interest or backing was generated to make socialized medicine the subject of a nation-wide high schoool debate. Few of us—you and I, and the man in the street—gave the matter more than passing thought. As our legal contemporaries say, we applied to it the doctrine of *res ipsa loquitur*—the fact speaks for itself—and the only word we heard it speak was: "Foolish." Previously—some time in February, 1935, while the security act was pending in Congress, the House of Delegates of the American Medical Association, at a called meeting, voted solidly against any form of compulsory sickness insurance. The farmers had been gently compelled to kill little pigs under a compulsory arrangement, so it is possible that the term was even more odious then than it is today. In April, 1937, a book with somewhat Communistic colors entitled: *American Medicine*, was published. It is informative to recall that at this time Moscow had ordered the members of the Communist Party in the United States to "bore from within," and the mad scramble was on among the Communists to join the existing organizations and parties in the United States. By this move they hoped to swing the thinking of these organizations and parties to the left, and thus advance the Communist cause.

How do these subversive rascals work? Our President, in his message to congress of January 4th, said in reference to these democracy destroyers, that the preliminaries to overt military action were aggression by means of:

(1) Propaganda.
(2) Subsidized penetration.
(3) Loosening of ties of good will.
(4) Stirring of prejudice.
(5) Incitement to disunion.

I commend to your consideration the thought that these are the identical means by which the proponents of socialized medicine seek to advance their doctrines. These people I have chosen to designate as "Powercrats."

Frequently we are told that the medical profession is always opposing and never proposing reforms in Medicine. I commend to your consideration the fact that under the American system of government Medicine has not lagged behind the progress that has been made in other fields. We have followed the plan of evolution rather than the hasty plan of revolution. Under the American system of government there has always been a tendency for things to right and adjust themselves in response to popular demand. Under this system, Medicine has changed as man has changed. The records are there for all who care to read, and against these records, against this American system the Communists are laboring.

Unhappily, these Communistic endeavors were rewarded among the medical profession in October, 1937, by the mis-called "declaration of independence" of the committee of physicians, which advocated government subsidy for medical education, hospitals, and research—just like they do it in Russia, in truth. A "declaration of convictions" objecting to the use of force and compulsion in the disguised form of a government subsidy rapidly accumulated 800 signatures and was still accumulating them the last I heard of it. The sound of Mr. John L. Lewis' voice was echoing throughout the land, saying that millions of American families have an income of less than $1,000 a year, while the minimum for a decent American standard of living is $2,500 a year. He vowed

*Presidential Address, [illegible] Asheville, February 7th.

that our problems spring from an economic source, and declared that industry could well afford to pay wages so that every family's income would be $2,500 or more a year. This inspired utterance evoked still more proponents of socialized medicine in the industries, who saw an opportunity to use the old horse of socialized medicine as a sop to the workers to quiet their demands for increased pay. During this time Hitler and associates were denying many German citizens the security they were due under the security act that Bismarck had forced upon them some 50 years previously. To save the coin of the Reich, Hitler was more or less ordaining doctors instead of educating them—his so-called "folk doctors." They have probably "freed" many of their fellow citizens from the clutches of disease ere this.

But propaganda was marching on, and in January, 1938, the national health survey, conducted by the U. S. Public Health Service and a group of W. P. A. workers who had been trained for a few days in survey taking, found that there was more sickness among families on relief and with low incomes than in families not on relief and with larger incomes. Of course, they could not accuse themselves of starving the W.P.A. and relief families into sickness; of aiding and abetting in public malnutrition; so when they found that the lower-income group also had fewer doctors' visits the entirely silly conclusion was reached that more doctor's visits would have meant less sickness, and they released waves of propaganda indicting doctors for not making more useless visits to people who needed meat and milk more than they needed capsules and cathartics. Then, while pointing the one hand in accusation at the physicians, with the other they drew up the articles for the so-called National Health Conference, and after hand-picking the delegates who were to approve the illbegotten results of their efforts, they had Miss Josephine Roche summon the 200 social workers, government employes, college professors, union organizers, editors of radical papers, motion-picture producers, and a few dentists and physicians.

It is a matter of record that most delegates were openly hostile to the handful of medical men present, and thunderously applauded, as stooges will, the speakers who lambasted the physicians as "reactionaries" and "vested interests." When those attending had talked themselves out, the federal compulsory health-insurance program, drawn up in advance and carefully kept secret, was presented. Not having time nor opportunity to study the program, few delegates could discuss it with any degree of intelligence, which was all right with the steam-roller, for no revision was invited and none was accepted. Rebuffed at every turn, somewhat amazed that instead of being conferred with, they had been used as a convenient background for the utterance of a proclamation in the best tradition of Hitler and helpers, the duly appointed and legally constituted representatives of the American physicians withdrew from the scene.

Meanwhile, the American Medical Association called its House of Delegates to meet, and in September, 1938, these representatives reaffirmed our objections to compulsory sickness insurance. Do not forget the "compulsory" part of it. During all this time, there was much muttering and mumbling against Dr. Morris Fishbein, Editor of the *Journal of the American Medical Association*. He was accused of being a czar, a medical dictator, of fathering all sorts of nefarious schemes to rob the public and obstruct progress. It is only right that we recognize Dr. Fishbein, who is Assistant Professor, Rush Medical College, and Lecturer on Medical Economics, University of Illinois School of Medicine, as well as Editor of the *Journal of the American Medical Association, Hygeia,* and *Society Medical History,* for his true accomplishments. In all the brilliant history of American medicine no editor has labored more valiantly and effectively to raise and safeguard the standards of medicine. Dr. Fishbein has been in the forefront of every effort to put down charlatanry and quackery and to promote sound medicine. Every improvement made in his time in professional education, in hospital service, in research and experiment, or in the bettering of relations between doctors and the public, has had the energetic support of Dr. Fishbein. Because of his influence, our patients have benefitted, and we have been helped. Who among you has not gained therefrom knowledge that has made of you a better doctor? As our editor, he expresses the opinions of us, which we transmit through the delegates who represent us in the national forums. It is we who speak when he speaks!

The American Medical Association is representative and democratic in its structure, and this is the carefully detailed method by which organized medicine functions. No individual member, including the "rebels," is denied the opportunity of presenting his views in his county society, his state society, or the national meetings. It is plain that we physicians are not the victims of some monstrous octopus that dictates our every thought and dominates our every act. Rather are we, in an organized sense, the freest of the free, the most individualistic of individuals.

As to the "system" of medicine which we are

accused of "enforcing"—what the patient tells the doctor and what the doctor tells the patient is the system, from start to finish. If the patient finds the system not to his liking, he has but to change his physician and thereby change the system; and this is true whether or not the patient is able to pay. Through the years the system has improved, because the physician has improved, and for no other reason. No system which has compulsory insurance as its base and partisan dispensation of medical alms as its peak can ever approach the source of inadequate medical care. Such a system of force and compulsion, as was the prohibition amendment, is distasteful to the American people. Such a compulsory system will serve as a complication to any disease of the social order that may exist. Rather than being a cure, it will be a curse, and will act only as a sham to blind us to the evils that it will bring into being.

We are told by the endless output of the Communistic propagandists and Powercrats that "millions of Americans lack adequate medical care." Miss Josephine Roche says so. Mr. Earl Browder, the head of the Communist Party in the United States says so. Numerous advocates of the overthrow of Democratic government say so. And poorly informed but well meaning people say so, because they have become convinced by the powerful propaganda directed at them that it is so.

It is absurd to assume that the elevation of the people from an unhealthy to a healthy state depends solely upon the number of visits they pay the doctor. The mixed committee of the League of Nations on the relation of nutrition to health, agriculture and economic policy issued a 300-page final report in August, 1937. This report cited the progress of the past century in health, and length of life, and concluded after great studies that the progress should be attributed to more and better food. The remaining obstacles to health were listed as "poverty and ignorance." The report added: "As a result of insufficient purchasing power or as the result of imperfect division between resources and food or through ignorance of food values, or through carelessness and indifference, or as the result of maintenance of food prices at levels involving hardships in large sections of the community or other causes, millions of people in all parts of the globe either are suffering inadequate physical development or disease due to malnutrition, or are living in a state of subnormal health which could be improved if they consumed more or better foods."

This is the conclusion reached by the committee, which was presided over by Lord Astor, who hails from a country where "socialized" medicine is at present in force. The committee was composed of experts from a dozen countries, including the United States. None of the United States delegates was a physician.

Therein lies the answer to the fact that tuberculosis is seven times more prevalent among low-income workers than among more prosperous groups, the key to the problem of why there is the greater amount of sickness and disease of the "ill-fed, ill-clad, and ill-housed" third of our population. If more people are paid more money for their goods or labor, more people will be able to have more of the necessities of life, including adequate medical care—competent medical care administered where there exists an adequate supply of all the necessities of life. Look about you. If you find that you have all those things necessary for you to live in comfort, then all you need do to have adequate medical care at any time is to call your physician. "Adequate" economic care must be provided before there can be "adequate" medical care; for however freely available physicians' services may be, such services are only a part of medical care. He may *prescribe* proper food, shelter, nursing, medicines and quiet; but who is there to provide the means for the lowest-income group to carry out his directions?

The Clayton act specifically excludes the "labor of a human being" as an article of commerce. Yet because we teach and practice that the welfare of the patient must be the first consideration of all who undertake to care for the sick, we are accused of acting, through our national association, in "restraint of trade!" Were human lives not involved, the whole affair would be ludicrous.

Various States have enacted laws which recognize that labor is not a commodity, but a human element. It may very well be that should the department of justice succeed in having the "labor of a human being" declared a commodity, it will at the same time succeed in dealing Labor a serious, if not deadly, blow. Certainly, as things stand, our labor friends will recognize that medical services are the labor of a human being, and as such cannot come under the provisions of the Sherman Anti-trust act. They will recognize that we are being subjected to "the big stick" in an attempt to frighten us into agreeing with every proposal of the Powercrats. Labor can see that there are no "vested interests" in medicine, for in medicine no man can pass his power or influence to his son.

The "arrangement" to which the American Medical Association properly objects is in the so-called Group Health Association adroitly set up in Washington by a loan from money allotted to the Home Owners Loan Corporation to be lent to per-

sons to keep them from losing their homes, or to provide themselves with homes. The association hired physicians to treat members of the Group Health Association. Whatever the members pay for medical service goes to the organization, not to the physicians who render the services. The Group Health Association pays the doctors the least they can get them to work for and keeps the rest. Plainly, no doctor who works under such conditions can be said to keep a professional status. It is an artful scheme to organize physicians into gangs bossed by laymen and to retail their services to all comers. The patient has paid in advance for adequate, competent medical care, but under this scheme there are no safeguards to see that he gets competent care. It could so easily become a policy to "let the buyer beware" that the District of Columbia Medical Society expelled these men and that is how the American Medical Association got into the fight. But the boys who are "boring from within," a la Moscow's dictum, set up a howl for the government to rescue them from the clutches of the monster, so out came old trust-buster Arnold. For a while, he huffed and he puffed, but not getting anywhere, he sallies forth with his "restraint of trade" charges. Since then he has been cackling steadily but to date has laid no eggs.

In fairness to the department of justice, however, it must be admitted that the present assault upon the American Medical Association did not originate therein.

All the anti-American weeklies and Communistic journals constantly belabor the American Medical Association, and denounce it under the name of the "medical trust." The only "medical trust" I know anything about is the trust that doctor has in his patient, and the trust that the patient has in his doctor. If the doctor does not suit the patient, he can select another doctor, and demonstrate the most efficient form of trust-busting one could want, for what the doctor tells the patient and what the patient tells the doctor usually involves trust and more trust, and well that it is so.

And now we hear the silken voices of our Socialistic friends telling us that socialized medicine is quite the thing because:

(1) They say it will distribute the cost of medical care by compulsory assessment upon every person.

(2) They say it will assure fixed income for doctors.

(3) They say it will make for earlier diagnosis.

(4) They say it will raise the quality of medical service.

Now, if these arguments were the whole truth, all doctors would be in favor of socialized medicine. But most doctors stand squarely behind the House of Delegates of the American Medical Association in opposing compulsory health insurance, because

(1) The cost would be three billions of dollars anually for the workers of America in the form of payroll deductions or direct tax. With the total population taken in, the cost would be more than four billion dollars.

(2) The control of the socialized scheme would land in the hands of the boys who voted "right"—for whatever job-dispensing party happening to be in power at the time.

(3) The quality and sincerity of medical service would inevitably be lowered. When every man's illness and misfortune becomes a public record on a certain form it will be a difficult matter for many to retain their self respect, let alone the respect of their friends and neighbors.

(4) Socialized medicine is unnecessary. Health conditions are better in America than in Europe, with its cumpulsory insurance scheme. In South America, Chile has compulsory insurance, with a death rate for the last year available of 25 per thousand. Argentine and Uruguay, without health insurance, have a death rate of 13 and 10.6 per thousand, respectively. In 1934, the last year for which statistics are available, there were 34 deaths from diphtheria in the United States per 100,000. In England and Wales, with state medicine, the rate was 170 per 100,000—five times as great as the United States.

(5) Socialized medicine as tried in Europe has been found wanting. This is admitted by Miss Roche's committee itself, which proposes to substitute group practice for the individual doctors.

(6) The proponents of socialized medicine admit that the patient will not be able to select the physician he desires to treat him.

(7) The effect upon the very people whom we all want to help will be harmful. The payroll deductions and increase in taxes will of necessity lower their standard of living and increase malnutrition. The additional economic burdens thereby imposed will add another straining point for the nervous and mental equipment of our harassed citizenry. There will be malingering. In England the number of days lost because of illness have doubled in 20 years of socialized medicine. In Germany the increase has been five-fold in 50 years.

(8) While it seems true that the doctor will be better paid, his remuneration will be subject to the whim and fancy of the various powers in control. The government, in making contributions to the funds, will surely feel it a duty to supervise administration. The doctor will have to think more of his politics and less of his patient.

(9) The die will be cast, the way will be paved, if compulsory health insurance is accepted, for communism. The socialization of law, of agriculture, of business, the controlled and censored press, will but await the fickle nod of an uncertain fate.

(10) Under socialized medicine our very lives as well as our freedom would be subject to whatever edicts might be promulgated by the inner circle from day to day.

Study these ten reasons carefully.

The Communistic Cousins may well begin to realize that, although in Europe the people may have become accustomed to bowing and saying "yes, Master," in America they continue to say as they have always said: "oh yeah?" These Powercrats pay scant attention to the fact that millions of Americans are striving to keep alive a world in which choice will still be possible—without dictation.

We, as a profession, glory in the incentives that have led such men as Dr. Goldberger and the other government employes who have added to the stores of medical knowledge. Hampered as they were by the petty jealousies, the service politics, the tendency to standardize all thought and action in accordance to "orders from headquarters"—as these men have pointed out in their own writings of their trials and travail—thus hampered they advanced largely despite, and not because of, their associates and superior officers. The traditions of Medicine were their stronghold and drove them ahead of the machine in which the could, without effort, have ridden. It is pertinent to call attention to the scandalous incompetency in the medical service of the Army as revealed by the Spanish-American War; and to say that no such incompetency has ever shown in private practices.

It is admitted that there exists in the medical profession in private practice men who are too lazy or incompetent to do their full duty when paid. It is these men who, largely, suffer from lack of enough practice to support themselves in the manner to which they should like to become accustomed. These men are to be found anxiously awaiting the day when "socialized" medicine shall drape their laziness, their incompetency, with the concealing cloak of bureaucratic benevolence. Then they may have their regular hours, their regular pay, their boondoggling surroundings, with plenty of spare time for ball games, crap games, and skin games, and the people who pay the bill may have them as their physicians! Mediocrity of medical ability will no longer be distinguishable from excellece!

What of our local situation? We have, in Buncombe County, some 100,000 residents, slightly more than half living in Asheville, with several thousand others living in the smaller towns. We have an efficient city health officer and an efficient county health officer with alert nurses and workers to guard us from the epidemic and infectious diseases. We have clinics in the city to treat other diseases, and a capable county physician to care for the unemployed poor who receive aid from the county. The indigent are hospitalized whenever necessary and accorded competent treatment by the same men who treat the rest of us. There are a few chronic alcoholics and similar persons whom most of us know from experience, and refuse to answer at every beck and call; but there are extremely few cases where good medical, surgical or hospital care is not given, with or without pay. There is no crying lack of medical care in our midst. While it is true that we have an insufficient number of hospital beds for Negro patients, this could easily be remedied by a minimum of coöperation and effort by our numerous professional alms-seeking organizations, or by some public-spirited groups. We have a number of competent Negro physicians, who are the leaders as well as healers of their people.

One swallow may not make a summer, but one skunk can certainly spoil the odor of thousands of rose buds, and the case that needs medical care and fails to receive it in these parts is so rare that it would surprise us doctors even more than it would surprise the public. Of course, there is a certain amount of red tape that must be gone through to protect the tax-payers, before the city or county authorities will accept the case as charity and guarantee the hospital bill. For these cases no one pays the doctor for his services. For this, they have earned the undying gratitude of people as yet unborn; for this, they have the praise of people now living; and for this, their principles have been lauded by people long since departed.

When the "forces of propaganda, of subsidized penetration, of loosening of ties of good will, of prejudice stirring," that would bring the medical profession into disrepute begin to realize that the profession still has the confidence of our people over and above any confidence ever given to any politician, to an diplomat, or even to any statesman, they may cease from their efforts to break down that confidence and turn to real coöperation with the medical profession in providing the kind of distribution of the advancements of medical science that all of us would have. They may heed these words of Mr. Roosevelt: "Events abroad have made it increasingly clear to the American people that dangers from within are less to be feared than dangers from without." These words of our president applied equally as well to

(To Page 133)

Symptoms and Diagnosis of Upper Urinary Tract Disorders in General Practice*

HUGH JUDGE JEWETT, M. D., Baltimore
Associate in Urology, Johns Hopkins University

THE upper urinary tract consists of two main parts: 1) the kidney with its coverings, and 2) the renal pelvis and ureter. The term upper is used because this tract lies above the bladder. A great variety of disorders may affect this upper tract, all of which may be grouped for practical purposes under the following major headings (*Fig. 1*): simple infection, obstruction,

PRINCIPAL UPPER URINARY TRACT DISORDERS		
MOST COMMON	LESS COMMON	LEAST COMMON
SIMPLE INFECTION	TUBERCULOSIS	INJURY
OBSTRUCTION (HYDRONEPHROSIS)	TUMOR	ANOMALY
STONE		

Figure 1

stone, tuberculosis, tumor, injury and anomaly. Of these, simple infection, obstruction and stone are most frequently encountered. Tuberculosis and tumor, however, are usually more serious, and the possibility of their presence should always receive due consideration.

Physical examination may elicit only vague sensations of tenderness on deep palpation, or it may reveal only the grosser pathological changes which have resulted in the formation of a mass, such as large hydronephrosis, tumor or perinephric abscess. We, therefore, are obliged to pay careful attention to the patient's symptoms, which, if correctly interpreted, may yield a surprising amount of information. These symptoms may be divided into four groups: 1) pain, 2) irritation of the bladder, 3) abnormalities of the urine and 4) general symptoms.

PAIN

Pain referable to the kidney and ureter is very diversified (*Fig. 2*). It may be localized in the kidney region, and characteristically described by the patient by placing his hand on the flank, with the thumb in the angle between the lowest rib and the vertebral column, and the fingers beneath the costal margin in the upper abdominal quadrant. Here it may be either acute, colicky and intermittent, or chronic, aching and constant. Migratory pain is that which descends slowly and intermittently towards the bladder, as is sometimes observed in the case of a slow, downward propulsion of a ureteral stone. Pain referred from the flank is of two types, acute and chronic. When acute, it is spoken of as radiating, and usually is felt as a

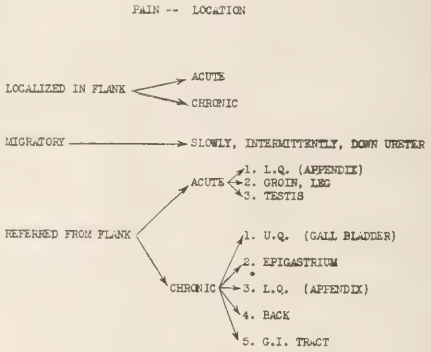


Figure 2

colicky, intermittent pain in the lower quadrant, groin, leg, or testis of the same side. In the right lower quadrant, acute appendicitis is sometimes mistakenly diagnosed. When the pain is chronic, the chief areas affected are the upper quadrant, epigastrium, lower quadrant, groin, gastrointestinal tract and back. In the right upper quadrant, pain may be incorrectly attributed to the gallbladder; in the right lower quadrant, to the appendix. One patient had vague symptoms referable to the right upper quadrant and a palpable mass beneath the costal margin. Although the gallbladder series was inconclusive, the surgeon felt sure of his diagnosis and advised cholecystectomy. At operation a normal gallbladder was removed, and a large mass palpated behind the posterior peritoneum. During convalescence a catheter was passed to the right kidney and a pint of urine was withdrawn.

Gastrointestinal symptoms are occasionally caused by renal disease. One of our patients suffered from dyspepsia and flatulence for a year, and a meticulous medical survey failed to de-

* Read before the Wake County Medical Society, Raleigh, February 9th.

tect any pathological basis for the symptoms. Before advising appendectomy as a last resort, his physician sought a urological consultation, and an intravenous urogram revealed bilateral hydronephrosis. The patient is now undergoing ureteral dilatations, and although only one side has been treated, he says he is at least 50 per cent improved.

Pain in the back is sometimes of renal origin, and may be confused with any one of the many other conditions responsible for backache. When present, it is usually localized in the lower thoracic and upper lumbar regions, just lateral to the vertebral column. In the presence of an atypical pic-

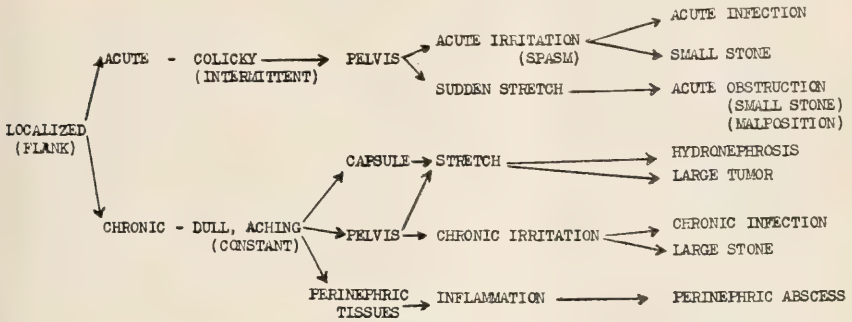


Figure 3

ture and inconclusive findings, it is suggested that an investigation of the genitourinary tract may prove fruitful.

The possible causes of pain referable to the upper urinary tract oftentimes will be suggested by a careful interpretation of the mechanisms involved. The kidney itself is an insensitive organ, but its true, fibrous capsule and pelvis are richly supplied with sensory nerves, those to the capsule being cerebrospinal in origin; those to the pelvis and ureter, sympathetic. According to the celebrated English neurologist, Henry Head, painful stimuli from the renal capsule are conducted to the tenth thoracic segment of the spinal cord, and impulses from the renal pelvis and upper ureter, to the eleventh and twelfth thoracic and first lumbar segments (Hinman). Therefore, stimulation of the sensory nerve fibers which supply renal capsule, pelvis and upper ureter may result in the excitation of closely associated cell bodies of sensory spinal or sympathetic nerves lying in juxtaposition in the same dorsal root ganglia. The spinal nerves subject to such vicarious stimulation are obviously the tenth, eleventh, and twelfth thoracic and the iliohypogastric and ilioinguinal. The sensory sympathetic nerves which may become stimulated in like manner are those components of the vast abdominal network whose cell bodies lie in the same spinal segments as those of the above-mentioned peripheral nerves. The most frequently involved run through the spermatic plexus and accompany the internal spermatic artery to the testis. This is the mechanism by which pain, referred through the peripheral or sympathetic channels, is thought to occur.

The usual manner in which the commoner pathological conditions operate to produce pain referable to the upper urinary tract can be understood more readily by reference to the following charts which are self-explanatory (*Figs. 3-5*).

It must be borne in mind that sometimes pain of distant origin may be felt in the region of a perfectly healthy kidney. For this reason a thorough examination should always be made in order to exclude such a possibility, especially when the findings pertaining to the kidney are inconclusive. Some of these extrinsic causes are represented in *Fig. 6*, and perhaps the commonest are retrocecal appendix, spastic colon and metastases in the lower thoracic and upper lumbar vertebrae.

Figure 4

Obviously, if pain of renal origin can be referred to distant areas, there is no apparent reason why the mechanism at times should not operate in the reverse direction.

Irritation of the Bladder

Vesical irritability, occurring as the result of an upper-urinary-tract disorder, almost always means that infection is present. The urinary symptoms of vesical irritability and the mechanism by which they arise are represented in *Fig. 7*. It is said that occasionally pathological conditions in-

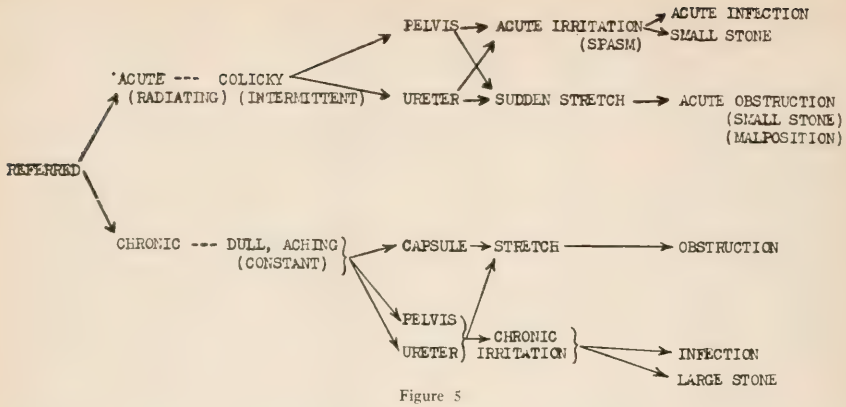


Figure 5

volving the lower ureter cause irritability of the bladder in the absence of infection; but such an effect is not usual, and cultures or animal inoculation usually show the presence of organisms.

EXTRINSIC PAIN REFERRED TO KIDNEY REGION	
PNEUMONIA WITH PLEURISY	COLON
SUBDIAPHRAGMATIC ABSCESS	MENINGES < INFLAMMATION / TUMOR
GALL BLADDER	VERTEBRA < TBC. / TUMOR (METASTATIC)
RETROCECAL APPENDIX	PSYCHOGENIC

Figure 6

The earliest symptom in mild cystitis is a vague sensation of discomfort in the region of the neck of the bladder. The patient voids voluntarily at moderately frequent intervals, because he feels that by doing so he may relieve the discomfort. As the irritation of the bladder becomes more marked, a reflex effect occurs, and, through stimulation of the motor nerves, the muscles of the bladder wall become irritable. Urgency now appears, and the patient voids at frequent intervals because the increased tone of the bladder muscles results in a decrease in the bladder capacity.

Abnormalities of the Urine

The next group of symptoms referable to the upper urinary tract consists of gross changes in the character of the urine voided. It may be said by the patient to contain blood, pus, gravel or "flesh." Gross hematuria immediately suggests the

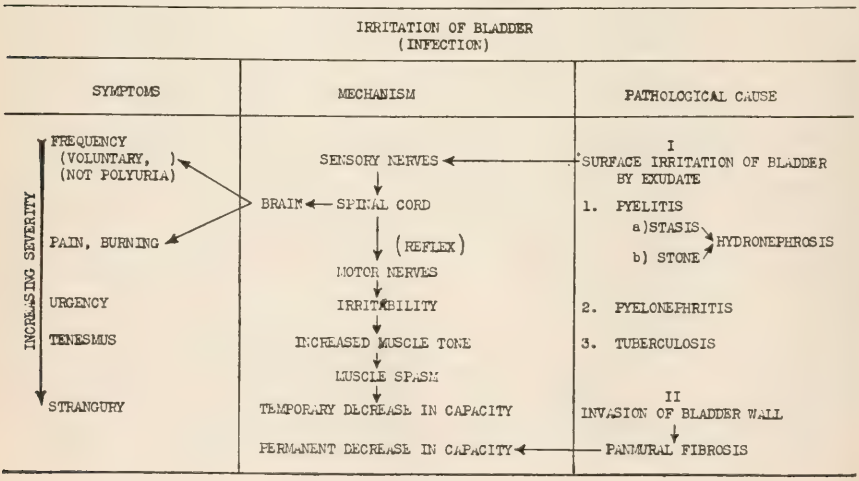


Figure 7

possibility of stone, tumor, or tuberculosis. Pyuria arouses suspicions of 1) pyelitis or pyelonephritis, with or without such complications as hydronephrosis and stone, or 2) renal tuberculosis. One noteworthy fact in this connection is that such blood or pus is always well mixed with the urine, so that if the patient voids in three glasses these elements are present in all three. Occasionally blood clots may be found in the form of long wormlike casts of the ureter. The presence of gravel in the urine is of obvious significance. The flesh, so-called, is usually a portion of a papillary tumor.

General Symptoms

These constitute the fourth and last group of symptoms arising from diseases of the upper urinary tract, and have their basis in either sepsis or renal insufficiency. Chills and fever represent acute infection, with or without hydronephrosis or stone, but the possibility that one or the other of these two complicating factors may be present should be borne in mind.

Renal insufficiency expresses itself through the gastrointestinal tract and the central nervous system. The common symptoms are anorexia, eructations, nausea, vomiting, hiccough, headache and dizziness, leading to fatigue, drowsiness and coma, or to restlessness, twitchings and convulsions. These symptoms of renal insufficiency result from either obstruction or failure of renal secretion. If obstruction is the cause it, obviously, must be bilateral, unless the opposite kidney be absent or functionless. The commonest causes of secretory failure are nephritis, dehydration, hemorrhage, shock and reflex vasomotor phenomena.

Diagnosis

After considerable light has been thrown on the problem by a careful evaluation of the symptoms elicited, in these four principal groups, one passes on to the physical examination and analysis of the urine. The resultant findings in many instances merely reinforce the impressions and suspicions already gained, and fall short of establishing any definite diagnosis. This can be made only by recourse to the x-rays.

The plain roentgenogram of the abdomen, spoken of as the flat plate, should be taken so as to bring out soft-tissue, as opposed to bony, detail. With a minimum of intestinal gas, this film should reveal the size, shape and position of the kidneys; the presence or absence of opaque shadows in the region of the kidneys, along the ureters, or over the bladder; and the lateral margin of the psoas muscle, spoken of as the psoas shadow. It should also show the condition of the lumbar spine and pelvis; and here one should look for lateral curvature of the spine, metastases in spine and pelvis, and spina bifida.

The excretory urogram—the so-called intravenous pyelogram—is usually much more interesting. The visualization of the kidney and ureter by this method depends primarily on the ability of the kidney to secrete urine. The more the function of the kidney is impaired, the less solution comes through, and the poorer the pyelogram will be. Intestinal gas, which usually accompanies severe pain or acute infection, also interferes with adequate visualization of the urinary tract. However, in the majority of cases one can recognize malposition of the kidney, poorly functioning kidney, congenital anomaly, hydronephrosis, stone, tumor and tuberculosis by this method, and the diagnosis can be made.

Summary

The presence of a disorder of the upper urinary tract may be suspected from a careful survey of the patient's symptoms. The suspicion may be confirmed by physical examination and analysis of the urine. The nature of the disorder may be established in the majority of instances by recourse to plain x-ray examination and excretion urography.

Conclusions

From the foregoing, one must conclude that a definite diagnosis should be made before instituting treatment. Blind treatment, directed toward the alleviation of symptoms, may not only fail to relieve those symptoms, but may prove definitely harmful. If, under the circumstances, an accurate diagnosis be not possible, every step should be taken at least to establish the absence of such diseases as obstruction, stone, tumor and tuberculosis.

New Fifteen-Minutes Syphilis Test

(L. Friedman, Philadelphia, in *Jour. A.M.A.* for Jan. 14th)

The test is especially applicable in cases of gonorrhea in which syphilis is suspected.

Centrifugation of the gonorrheal discharge, or any other body fluid capable of being collected in a capillary tube, at low speed gives a clear specimen of serum suitable for dark-field examination.

The author isolated the syphilitic organism from the gonorrheal discharge of one patient 50 days before the blood test showed the organism and in two patients whose history was not suggestive of syphilis.

Rupture of Esophagus From Blow on Abdomen

(*Radiology*, January)

A 4½-year-old boy was admitted to hospital in shock and pain, his abdomen board-like. A few hours before had a heavy mantlepiece fall on his abdomen. X-ray examination showed r. pneumothorax. Laparotomy disclosed no lesion. Next day there was dulness over rt. lung and x-rays diagnosed fluid. Thoracentesis obtained gastric contents. At necropsy two large holes were found in the lower third of the esophagus above the diaphragm.

A Modified Neufeld Technic For the Rapid Typing of Pneumococci Introducing a Combination Mucus Solvent-Stain and a New Type of Serum Dropping Vial*

J. M. Feder, M.D., Anderson, South Carolina
Director of Laboratories, Anderson County Hospital

THE clinical effectiveness of type-specific serum in the treatment of pneumonia has been amply demonstrated. An abundance of scientifically controlled statistics from great medical centers proves that the mortality from this disease can be reduced from 15 to 30 per cent when this method of treatment is promptly instituted and properly applied.

The results obtained must of necessity bear a direct ratio to the accuracy and speed with which the type of the offending organism is determined. Introduction of the Neufeld capsule-swelling method greatly simplified the procedure; but, even with this aid, it is not as pitfall-free and fool-proof as some would have us believe. On the contrary, one finds the work sometimes highly difficult and trying when only a few organisms are present.

In former times, when it was necessary only to find out if the organisms present could be typed by the two available sera the situation was much simpler. Then all pneumococci that did not classify as type 1 or 2 were tossed into the group-4 wastebasket. Under those conditions more time was available for leisurely evaluation. The situation is now much more complicated as it is essential to select the type of offending organism from among 32 possibilities.

This highly technical task often presents almost insurmountable obstacles to experts; and experts are not always within easy reach when the necessity for emergency typing arises. More often than not it must be undertaken at some odd hour by the junior technician, an intern or medical resident, or the physician in charge of the case.

With the end in view of broadening the scope of serum therapy in pneumonia by making accurate typing more easily available, a study has been made of the difficulties encountered by the occasional worker and an attempt has been made to tabulate these difficulties in regard to their importance:—

1. Sputum specimen improperly collected.
2. Difficulties encountered in working with tenacious sputum.
3. Bacteria indistinctly stained, causing the capsule reaction to be difficult to recognize.
4. Confusion and errors arising from the types of serum-containers commonly employed In the outfits furnished by the commercial houses these vials are not arranged to best expedite the work.

It will be noted that speed is stressed next to accuracy. In our service we consider pneumococcus typing an emergency and it is carried out day or night with the same promptness as an emergency blood count is made when confronted by a case of suspected appendicitis. In our opinion the hours count in the time lost in exhibition of the proper type serum in pneumonia in the same degree that they count in instituting prompt surgery in an acute abdominal disease.

In attempting to carry out the purpose to which this paper is dedicated, an effort has been made to produce a method that is accurate and as fool-proof as it is humanly possible to make it. One that would, at the same time lend speed to even the novice, should prove advantageous. The results of our investigations towards these ends will be reported under the following several subheads:

Collection of Sputum Specimen:—If the worker does not wish to be presented with a soggy sputum-cup, filled to overflowing, it is best that he or she learn at the outset that nowhere does the old adage, "If you want a thing done well, do it yourself," apply better than here.

The patient's mouth should be rinsed with water, saline or 10 per cent solution of peroxide. If it does not cause too much disturbance, the throat should also be gargled. This cleansing process completed, ask the patient to cough deeply and expectorate once into your sterile container. We use a one-ounce bottle for this purpose, preferring one with a very wide mouth. *Be sure that sputum is obtained from deep in chest—you do not want saliva, and that is what you will probably get if care is not exercised.*

Technic for Dissolving Mucus and Staining Organisms in One Operation:—Everyone who has at-

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

tempted to work with rubbery, tenacious sputum is well aware of the difficulties encountered. In our hands all methods recommended—all the way from attempting to snip off beads of the ropy mucus with manicure scissors to shaking it in a bottle with beads and broth—have proven equally messy and unsatisfactory.

With all of the commonly used methods failing to produce the desired results, a search was made for some substance that would liquefy the mucus without interfering with the capsule reaction of the pneumococci. After a number of trials with various agents, an extract of papaya[1] (caroid) appeared to be the most suitable.

While searching for a suitable solvent, sight had not been lost of the need for a staining agent that would give much more clarity of detail than is obtained by present methods. We have found that the small amount of methylene blue incorporated in commercial typing sera is insufficient. The common expedient is to add a loopful of stain to each serum-sputum set-up. This entails an added step in the technic and the dye not infrequently precipitates, thus confusing the picture. So our problem was not only of determining a suitable solvent for mucus and combining with the solvent a suitable dye. Necessity demanded a stain that would not precipitate under any circumstances, that would produce such sharpness of detail that the capsule reaction could be determined at a glance. The dye finally decided upon was toluidine blue. The solvent-stain mixture is made according to the following formula:—

Powdered caroid	1.5 Grams
Toluidine blue	0.75 Grams
Formalin 10%	5.0 c. c.
Water, distilled,	q.s. 100 c. c.

The caroid is placed in a mortar and rubbed to a smooth paste by the addition of a few cubic centimeters of glycerine. The water is heated to the boiling point, the stain added to it and dissolved. The stain-water mixture is slowly added to the caroid in the mortar, with constant stirring. After this preparation cools the formalin is added. Then the mixture is filtered. The preparation keeps indefinitely, the formaldehyde acting both as a preservative and a mordant.

Technic for Applying Solvent-stain Mixture to Pneumococcus Typing:—Having collected the specimen of sputum as noted under that heading, add to it an equal amount of the solvent-stain solution, then shake the bottle vigorously for five minutes. At the expiration of this time, the most ropy material will usually have been liquefied. If mechanical shaking equipment is available, it will prove advantageous; however, the bottle can be shaken equally well by hand.

An Improved Container for Typing Sera: Their Orderly Arrangement:—Typing sera are supplied by the manufacturer either in rubber-stoppered vials or in capillary tubes. Both of these are open to objections. Use of either means lost motion which means slowing up an emergency procedure.

1) The rubber stoppers are hard to remove; their use invites contamination of the serum if unusual care be not exercised.

2) This procedure requires the platinum loop. The use of this instrument, in addition to slowing down the work, adds the possible hazard of reducing the potency of the serum by using a wire that has not cooled sufficiently.

3) Capillary tubes used as serum containers overcome the contamination problem, however, their use is even more time-consuming than the stoppered vial. Each end of the tube must be nicked with a file, broken off and a rubber bulb applied to expel the contents. Bits of the splintered glass have a way of getting under the cover and occasionally, cut fingers are encountered.

The most suitable containers in our experience are 2-c.c. serum vials, each containing a capillary dropper and bulb. The bulbs employed by us differ from those commonly used for expelling vaccines etc., in that they have a closed top, thus insuring freedom from contamination from this source.

The vials and bulbs used by us were obtained through the courtesy of the Hollister-Stier Laboratories of Spokane, Washington, and are the same as those used by them for dispensing their skin-test allergic antigens.

A container for these vials has been arranged in a manner calculated to expedite handling. To this end, the six group sera have been placed in the lower row. Directly in front of each group, a row of vials have been placed containing the respective type sera contained in that group. Thus, in the first row on the left, the group serum is A. In front of this letter, in the order given, we find types 1, 2 and 7. This same scheme is carried out as to the other five groups. As a safeguard, in the event that tubes should become misplaced, a card has been pasted in the lid of the box upon which have been noted the various groups and corresponding types.

Typing Pneumococci by the Rapid Method Outlined in the Text

1. The sputum is collected as noted under that subhead, an equal amount of the mucus solvent-

1. We are grateful to the American Ferments Company of Buffalo, New York, for their cooperation in supplying us with the Powdered Caroid used in connection with this series of experiments.

stain is added to it, the container is shaken vigorously for five minutes.

2. Three slides are set up, marked A and B on the first and the others marked to correspond to the other groups.

3. Using a capillary pipette, a small drop of the sputum mixture is placed on each end of the slides. (The platinum loop has no place in our scheme of things.) If pneumococci are scarce, they may be concentrated by centrifugilization, the supernatant fluid decanted and type determination made from the sediment.

4. With the capillary pipette a drop of the proper typing serum is added to each drop of solvent-stain.

5. Serum and solvent-stain are quickly mixed with a toothpick, and a coverglass dropped on, not pressed down, or the material will be expressed at the edges.

6. The slides are placed in incubator for 5 minutes. Search is made for capsule swelling, using the oil immersion lens, being careful not to press upon the cover glass with the lens.

7. After the group has been determined, determination of type is made in a similar manner, using the typing sera catalogued in that group.

Control Experiments

The natural question that at once occurred to us was whether or not this digestant-stain would have any effect upon the capsule reaction or viability of the organism, even when exposed to its influence for long periods of time.

In an effort to determine this, pneumococci of types 1, 2, 4, 6, 7, 8, 14 and 18 have been kept in the incubator after being treated with this preparation, and the capsule-swelling reaction was as sharply defined at the end of 48 hours as at the start of the experiment.

It appears from this that we also have a desirable preservative for use when sputum specimens are being transported to the laboratory from distant points, as ordinarily lysis of the organism takes place with extreme rapidity.

Summary

1. A modification of the Neufeld technic for typing pnumococci has been presented, whereby it is possible to reduce the time consumed materially. In doing this, the method has been simplified without in any way sacrificing accuracy.

2. A new preparation has been introduced for dissolving mucus and staining the organisms in a single operation. This liquefied sputum can be handled with a dropper, eliminating the time-consuming platinum loop.

3. A satisfactory typing serum bottle with a suggestion for convenient arrangement of these bottles has been presented.

4. Experiments have demonstrated that the reaction of pneumococci is in no way influenced by contact with the solvent-stain over long periods of time.

5. Use of this solvent-stain solution has been suggested as a preservative to be used in transportating sputum specimens to laboratory for typing.

6. As this article goes to press, we have the promise of at least one biological house that consideration is being given to marketing their typing sera in vials that carry our specifications and to be arranged as noted in this article.

From Laboratories of Anderson County Hospital,

Note:—We wish at this time to express our appreciation to the Lederle Laboratories, Pearl River, New York; and Squibb Laboratories, New Brunswick, N. J., for their courtesy in furnishing the typing sera used in connection with the research work herein outlined. Credit for the arrangement of the vials and substitution of the capillary dropper for the platinum loop in handling the sputum mixture is due my chief technician, Mrs. Nan Stewart.

Discussion

Dr. Francis B. Johnson, Charleston:

The idea that pneumococcic typing should be considered an emergency is one that should be strongly emphasized. Method of obtaining sputum and avoiding saliva should be stressed. The method of liquefaction is a technique which has been needed, but whether it is essential for all sputum is questionable. It is undoubtedly excellent for transportation. Löffler's methylene blue, being an alkali, can be used in breaking up sputum. If it is added to a small area of sputum, so that a loopful can easily be obtained, it will stain the pneumococci, not interfering with the Neufeld reaction when the serum is added later. The idea of the antiserum container seems to be practical, but I don't believe the platinum loop should be discarded entirely for the capillary pipette. We have found that if one loopful of sputum is used it is necessary to use only one loopful of antisera. I believe this saves more antisera than a capillary pipette would. Time can be saved in using two 4-mm. loops made of platinum iridium, a firm material which cools rapidly.

In cases of children, and those adults who do not expectorate sputum, and in some cases where the sputum is very stringy, the following rapid culture method has been proved to be valuable: Deep throat swab, forcing the patient to cough, and if possible catching some of the sputum on end of cotton. Or use small bit of sputum if it is expectorated. This material is oculated into a medium of ascitic fluid, 0.5% dextrose, 2% neopeptone, and incubated from two to four hours at 37° C. Type directly from medium, or if growth faint centrifuge and type sediment. Straight ascitic fluid will prove to be of about equal value. In two to four hours it will nearly always be found that pneumococci will grow to an extent that they can be typed without much difficulty. Ascitic fluid seems to favor the rapid growth of pneumococci, these organisms outgrowing in 2 to 4 hrs. the various others that may be present.

Dr. J. M. Northington, Charlotte:

I purpose to contribute to this discussion in an editorial in the Journal.

Surgical Observations

A Column Conducted by
THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

THE TREATMENT OF SUPPURATIVE APPENDICITIS IN ADVANCED PREGNANCY

In advanced pregnancy, especially after the second or third month, if appendicitis develops, we have an especially serious condition. It is often difficult to make an accurate diagnosis of appendicitis developing in advanced pregnancy. In pregnancy there are many different kinds of pain in the abdomen; so often patients note these pains and attribute them to the pregnancy and fail to call a doctor in time, and when the doctor is finally called, suppurative appendicitis has often already developed. This is a distressing condition and presents many problems. The patient is in grave danger, especially if premature labor occurs.

The family often overlooks pain and thinks it is due to some natural cause; therefore the condition is allowed to progress until suppuration occurs, at which time the patient becomes so distressed that a doctor is called immediately. When the doctor arrives, he usually finds a suppurative condition. The enlarged uterus pressing up elevates the cecum and appendix to a point where it is considerably higher than usual. The suppurative condition, which is often walled off very well, lies between the upper and outer surface of the uterus, the lateral abdominal wall and the cecum. We have, therefore, a suppurative condition and a localized infection which Nature is trying to wall off. This walling-off process is usually successful at first.

The greatest danger now comes from a miscarriage or premature labor. If this occurs, the uterus shrinks rapidly in size and this permits the infection to extend rapidly over the lower abdomen, enormously increasing the hazard. This is one of the most serious conditions that can face any patient, and the mortality is very high.

If the patient be seen before miscarriage the pregnancy is usually recognized at the time of operation or before, and we can begin to plan the treatment and make ready for the possibility of a miscarriage later on.

Before the miscarriage occurs, we can do many things for the patient's safety. The incision should be inspected at frequent intervals, the wound carefully dressed and drains promptly removed. The skin should be gotten and kept in the best possible condition. Everything that possibly can be done to raise the morale of the patient is helpful.

Glucose and saline injections should be given freely, and blood transfusions if necessary. The patient must be supported by every means possible. If the type of organism is known, the appropriate serum may be helpful. The patient should be kept in the proper position. Isolation is another important factor. This enables one to control the visitors and see that the patient has the proper influence.

For the past several years we have been using x-ray treatment in all suppurative conditions of the appendix, and for the past year we have been using sulfanilamide. Since then our mortality has dropped practically to zero. Where a miscarriage is impending, I believe it is well worth while to use sulfanilamide in advance of the miscarriage. If the patient is unable to retain anything, neoprontosil may be given hypodermically.

Since many cases of suppurative appendicitis are doubtless associated with gas-bacillus infection, it is a good plan to give a large. prophylactic dose of perfringens antitoxin. This, in addition to x-ray treatment, is especially valuable in combatting gas-bacillus infection.

In any case of suppurative appendicitis associated with pregnancy, a carefully planned method of treatment should be begun immediately. Nothing should be left undone that can possibly aid the patient in making a recovery.

THE TREATMENT OF CARCINOMA OF THE CERVIX

In advanced carcinoma of the cervix uteri, any treatment is apt to prove disappointing. However, it must be remembered that some cases that appeared hopeless of cure five to 10 years ago, yet were treated in desperation, and the patients are well today.

One of the most spectacular cases I have ever known, one of advanced carcinoma of the cervix involving the vaginal wall which appeared incurable and unpromising of improvement, had local treatment with the endotherm and cautery, radium and deep x-ray therapy over a long period of time, and the growth disappeared entirely and now, after nine years, the patient is well and strong. Other cases, perhaps not quite so extensive but which are ordinarily classed as hopeless and incurable, have had equally good results under the same treatment.

At the present there is some controversy over the value of radiation produced by the 200 and the 400 kilovolt apparatus and tubes. The technique of giving radiation daily, over a long period of time, is believed to be the best method with the x-ray equipment that is generally available.

That certain groups of cancer cells would be

affected one day, another group the next day, is not an unreasonable supposition. That one type of cancer cell might not be radio-sensitive one day, and the next day easily killed by the proper dosage of x-rays, is another likely supposition. X-ray treatments in advanced cases, as many as six weekly for six weeks and in some cases two treatments daily for a period of six weeks, might be advisable. These treatments are given over the anterior and posterior parts of the body and by a cross-fire method which is calculated to expose all the cancer area to radiation.

With the new equipment which we have available, the direct application of x-rays to the cervix is possible and may be given in most cases with little or no difficulty. Naturally exposure of a cancerous growth to the rays direct is far more desirable than having to give them through half the thickness of the body. This direct application of x-rays to a malignant growth of the cervix promises to raise the percentage of cures considerably.

There is still a place for radium. In many, perhaps most, cases it is indicated, the amount of radium, of course, depending upon the nature and extent of the growth.

A carefully conducted biopsy of the cervix to check on the progress of treatment may in some cases be advisable. Where it is desirable to tell what progress is being made in the treatment of the cervix, small pieces of tissue may be removed with the endotherm loop from different parts of the cervix. These are carefully labeled and the position from which they are removed recorded so that if cancer cells are found in one area and not in others we can apply treatment directly to this area with a far better hope of getting good results than if we treated the entire cervix not knowing just what part was most seriously affected.

Every case of carcinoma of the cervix should be studied from the standpoint of the growth of the patient generally. One should never be too quick to pronounce any case incurable and hopeless. At the same time, the danger from even a beginning carcinoma should never be under-estimated. In each case the treatment should be thorough and nothing should be left undone that will produce a cure. Even where a cure is impossible, much can be done to slow up the progress of the disease and make the patient's last days comfortable.

A better understanding of the nature of malignant growths of the cervix and carefully following the improved technique for treatment, using every possible means to produce a cure, has resulted in a gradual increase in the percentage of cures each year. A patient with cancer can now look forward with more hope than ever to obtaining a cure.

Clinic

Conducted By
Paul F. Whitaker, M.D.
Kinston, N. C.

An unmarried school teacher of 45, was first seen at the office on April 20th, 1935. The chief complaints were anorexia, general weakness, nervousness, slight fever and a weight loss of 20 pounds. The previous December she noticed that she was gradually becoming nervous and easily fatigued. The weakness, at first hardly noticeable, became progressively worse. Her students "got on my nerves" and she had difficulty in controlling her emotions. In January she gave up her position and her condition grew steadily worse. In February she lost her appetite almost completely. Food was obnoxious to her and from time to time she vomited. On two occasions she fainted. For the past three weeks she had run almost a constant temperature of 99 to 100°. Her family physician had been seeing her since February and giving her iron after he found her hemoglobin 50%. One year ago she had had similar but much milder complaints for about two months.

The history revealed palpitation, dyspnea and tachycardia. She was conscious of her heart beat practically all the time. The genito-urinary history was negative. She had reached an uneventful menopause at the age of 41. She had an error of refraction and properly fitted glasses. From time to time she suffered with dizziness. She had had the usual diseases of childhood. The personal history was negative save for the fact that she had worried considerably over having given up her teaching position. The family history was irrelevant.

Apparently well nourished she did not show evidence of weight loss. The skin had a peculiar lemon tint. There was a systolic murmur at the heart apex transmitted to the axilla. The muscular element was fair. The apex beat in normal position, rhythm normal, rate 100, response to exercise not determined, b.p. 120/80. The spleen was barely palpable. There were several small ecchymotic areas on the left arm. Examination, including rectal digital, otherwise negative. The white cell count was 2,850—54 polys, 1 large lymphocyte, 1 eosinophile, 1 neutrophilic myelocyts, 1 basophilic myelocyte; red cell count 1,460,000—poikilicytosis and anisocytosis present; hemoglobin 37%, color index 1.32%. 1 normoblast. Malaria parasites and blood Wassermann negative. The blood urea was 26 mg., sugar 94 mg. per 100 c.c. Gastric analysis revealed a total acidity of 8, 4, 6 and 8, a free HCl of 0, 0, 0 and 0, lactic acid negative, blood negative. Examination of the duodenal as-

pirates negative. Urinalysis on morning, noon and night specimens collected separately revealed a sp. gr. of 1024, 1018 and 1007 respectively. All were acid in reaction, all showed a faint trace of albumin, all were negative for sugar and microscopic examination on all were negative. Stool examination negative for ova, parasites and blood. The basal metabolic rate was plus 17%.

Discussion: The symptoms, the enlarged spleen, the blood picture and the achlorhydria were all typical of pernicious anemia. The usual glossitis was not present though she stated that her tongue was slightly sore during the period of the slight symptoms one year previously.

Diagnosis: Primary pernicious anemia.

Treatment: She was placed on 12 capsules of Lilly's extralin daily and dram doses of hydrochloric acid in buttermilk after each meal. She was given a liberal diet of meats, green vegetables and fruits. She returned to the office in three weeks feeling much improved. The appetite was normal and she was eating well. The temperature had subsided and the weakness and nervousness were definitely better. The red cell count was 2,720,000. Three weeks later the blood count was 3,220,000 with hemoglobin 70%. The clinical improvement had been maintained. The extralin was reduced to 9 capsules. On Sept. 22nd, 1935, she was feeling entirely well. The blood count showed 4,600,000 red cells with hemoglobin 84%. The weight was 133 pounds as compared to 116 to begin with. She was told that she could probably return to her teaching position after Christmas. She was seen again on Jan. 21st, feeling entirely well. The red blood count was 4,650,000 with hemoglobin 86%. It was explained to her that she would have to continue the capsules for life as she preferred them to parenteral injections of liver extract.

Note: This patient was seen two months ago by Dr. Turrentine. She was well and happy and had a normal blood picture. There is nothing unusual in this case. It is reported as an average case of pernicious aenemia with the usual diagnostic findings and usual treatment.

DUKE HOSPITAL TO BE ENLARGED

Plans for a 200 room addition to Duke Hospital, Durham, have been announced. This addition will provide for around 100 new beds, raising the total capacity to more than 550 beds, and will provide for the expansion of the hospital's clinic services. The architecture will conform to the Gothic pattern of the other University buildings.

BLACKBERRIES, huckleberries, raw red meat, red wine, bismuth, charcoal or iron may give the stools an appearance suggestive of bleeding.

DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

THE PRESS AND PHYSIC

MANY of the newspapers seem to me to favour so-called socialized medicine. One would be obliged to infer that the papers think many people in this country are suffering for medical attention and for hospital care; and that physicians not infrequently charge exorbitantly those who are able to pay.

Two, three, probably four times within a year have newspapers stopped their visitations to me. My subscriptions, paid, perforce, always in advance, had expired! Were a physician to refuse to start upon his call until the cash for the visit were placed in his palm, what would the press have to say? And, if the patient were removed from the hospital at two in the morning, and stretched upon the side-walk, because the prepayment for hospital care had been used up, what would the press again have to say? Do physicians charge those able to pay their fees two or three times the medical fees charged a few years ago? I doubt it, but I think I know that many daily papers charge two or three times as much for copies of the dailies as was charged not many years ago. Do physicians withhold their services from worthy people who are unable to pay for them? I can not answer the question, but I wonder how the length of the list of charity-subscribers to newspapers will compare with the length of the list of the average physician's number of payless patients. And I wonder, too, if the press busies itself in supplying the inpecunious literates of the country with the productions of the press. I infer that the people of this region of the country may be more in need of mental pabulum than of physic. Yet I hear of no movement by the press to encourage the government to establish daily and weekly newspapers, and weekly and monthly magazines, and to furnish such publications gratis to the people who are unable to buy them. Nor do I recall the name of any editor who complains that newspapers cost the people too much, and that the government should take them over and proffer them to the people at a cheaper rate or at no cost at all. Such a suggestion would cause the press to cry out in one voice in protest against the danger of destroying the freedom of the press. Yet I doubt not that the government can operate printing presses much more skilfully than it can practice medicine.

Socialized medicine—it means to me the private practice of medicine by the government—is not a new form of medical practice in this country. Our present form of Federal Government is somewhat more than 150 years old. Throughout all those years most of the mentally sick in this country have been cared for in state hospitals. Such medical service is socialized medicine. The state hospitals are sustained by appropriations from the public treasuries; the hospitals are managed by lay boards selected by the dominant political party; the chief physicians and the members of their medical staffs are selected by the lay boards. The patients in the state hospitals are under the exclusive care of the medical staffs. Practically all other physicians are shut away from the patients. The political party in power has been free to do with mental medicine in the state hospitals what it would. What is the condition of mental medicine in the United States today? It is about seventy-five years behind physical medicine. Were the private practice of medicine to become governmentalized would it become likewise politicalized? What department of government is not politicalized? Agriculture? Army? Navy? Commerce? Lawmaking? Transportation? Is the predicament of medicine in the United States today as unfortunate as the predicament of the Federal Government? Who believes it is? No honest man.

No good doctor is willing for any mortal to suffer for medical attention. No person, however impecunious, should be allowed to go without needed medical care. But such service should be provided and supervised by the division of government nearest to those in need. The patient, the physician, and society will all suffer when calls for medical attention have to be made to the Nation's capital or to the capitals of the several States.

When the press becomes as actively concerned about individual freedom as it is about freedom of the press it may conclude that individual freedom carries with it freedom of the press and of all other activities. And I have little doubt that many newspapers can render their readers a much more wholesome service by discussing editorially and otherwise the hurtfulness to health of the use of many advertised proprietary medicines than by essays on bacteriology and psychiatry. I have not yet been able to discover how a newspaper can advertise habit-forming patent medicines and alcoholic beverages and hold fast to reputability. And yet, many such papers presume to tell us how we should and also how we should not, practise medicine!

UROLOGY

For this issue Wm. Clifton Lott, M.D., Asheville, N. C.

Hydronephrotic Kidney

Enormously dilated kidneys are not a rarity, but to see a 19-year-old person with a kidney so huge as to present a bulging of the entire abdomen—almost simulating a full-term pregnancy—who had been subjected to an appendectomy and subsequently an exploratory opening of the abdomen before a correct diagnosis of hydronephrosis could be made, is certainly a rare error in proper diagnostic procedure.

This patient was sent to the hospital with a diagnosis of probable right ureter obstruction because of pyuria, and pain in the lumbar region radiating downward along the course of the right ureter. Six weeks previous to admission, an appendectomy had been done, and 10 days later a high right-rectus incision was made as an exploratory procedure to identify a mass which filled the entire right abdomen and extended beyond the midline.

On admission, the boy was well-nourished, appeared to be in good health, but complained of some pain and discomfort over the entire abdomen. Urinalysis revealed an abundance of pus cells and colon bacilli; albumin 2-plus; glucose, negative; alkaline reaction. (Only the positive findings will be recorded here.) With the patient lying on his back, there was seen an enormous protrusion of the entire right abdominal region. Palpation revealed a movable, smooth, hard, tender mass extending upward under the right costal margin and downward into the pelvis and beyond the midline to the left. There was a high right rectus scar. X-ray examination revealed a large unidentified mass filling the entire right side of the abdomen; cystoscopic examination revetaled a moderately congested bladder mucosa; indigo carmine given intravenously showed a non-functioning right ureteral orifice but there was excellent output of the dye from the left ureter. A No. 5 ureteral catheter could be passed up the right ureter to a point 7 cm. from the bladder. Thick pus was aspirated from the catheter. A similar catheter was easily passed up the left ureter. A left pyelogram revealed slight hydronephrosis of the left kidney. Injection of skiodan through the right ureteral catheter revealed a dilated ureter filled with contrast medium no farther up than the tip of the catheter. Intravenous urography revealed no excretion of the opaque substance on the right side, but did show a fairly good functioning left kidney.

Through the lumbar route, the right kidney was explored, and an enormous hydronephrotic kidney

was found extending upward to the diaphragm and downward into the pelvis. Medially the mass was densely adherent to the peritoneum. A nephrostomy was done and four liters of purulent urine drawn off. The nephrostomy tube was left in place for three months, at the end of which time, injection of sodium iodine solution through the tube revealed a shrinkage of the kidney to a capacity of 1000 c.c. The left kidney had improved satisfactorily both as to function and infection. Removal of the hydronephrotic kidney was deemed proper, and at operation the cause of the ureteral obstruction was clearly evident; an anomalous vessel was found hooking under the right ureter just below the pelvis. This anomaly had produced intermittent blocking of the flow of urine from the kidney since birth of the patient. Of course the intermittent filling and emptying of the kidney, together with the apparent good health of the patient, had evidently caused numerous physicians to miss the diagnosis until this boy had reached the age of 19 years. At the time the appendix was removed, no mass was present, the kidney having emptied before the patient was seen by the examining surgeon: 10 days following the operation, the kidney had again become filled and palpable. However, a careful examination, including urinalysis should have revealed the pyuria thus prompting the physician to either do or have done a thorough urological examination.

SOUND HEALTH—Roberts
(*From Page* 121)

the medical profession as to the nation when he spoke them on January 4th, 1939.

That the common sense of the American people will inveigh against any "socialization" of medicine is my firm belief. The average citizen knows that his doctor is not oppressing him. He has seen him make the lame to walk, the blind to see, the weak to be strong. He has seen him snatch his loved ones from the grasping jaws of impending death. He has seen him work so diligently for the dying that not infrequently the specter of death has been forced to withdraw and lay plans for a return engagement at a later date. The average person knows that while his doctor may be somewhat of a sinner, he is a whole lot of a saint, and hopes that when the Chief of Staff calls him to the Great Beyond, He will elect him an Honorary Fellow of Eternity for having done his Master's bidding.

And so I believe, in the final analysis, we need never be pessimistic of the ultimate destiny of medicine, or indeed of science, for only science represents the truth, and medicine is the finest offspring that mother science has produced.

OBSTETRICS

For this issue F. Bayard Carter, M.D., Durham, N. C.

The Interruption of Pregnancy

One of the big problems in obstetric and genecologic practice is the problem of the interruption of pregnancy. It is well at times for individuals and clinics to review their statistics on the problem.

In the time embraced by a series of 1300 ward deliveries we reviewed the cases of 220 patients, referred to us by physicians for possible interruption of pregnancy, and we found that we interrupted pregnancy in 100 patients. In short appro imately 1 in every 7 admissions to our service in that period of time was admitted for the possible interruption of pregnancy and approximately 1 in every 15 patients had interruption performed either for pre-existing disease or for disease developing in early pregnancy.

In this series of 100 patients all had interruption of pregnancy before the fifth month. Ninety-nine of these patients were in the ward; the remaining one was a doctor's wife with nephritis. Of these patients 74 were white, 26 colored; 77 from rural districts, 23 from city or town; 94 multiparae, and 6 primiparae. Interruption was by dilatation and curettage in 34, by abdominal hysterotomy in 66. We perhaps were ultraconservative in deciding that the remaining 120 patients' pregnancies be not interrupted, but continued under close supervision.

Of the 100 interruptions the following indications for the procedure were found:

1. Diseases of the kidneys and ureter:

   Nephritis, 49 patients; previous nephrectomy with pyonephrosis, malnutrition and anemia, 2; ureteral calcus and anemia, 1; ureteral stricture, pyelitis and anemia, 1; pyelitis, anemia and malnutrition, 1.

2. Central nervous system:

   Epilepsy, 3; central nervous system syphilis, 1; cerebellar tumor, 1; basal ganglia lesion, 1; psychoses, 3; Eugenics Board patients—moron-incest, 1; feeble-mindedness, 1.

3. Diseases of the heart:

   Mitral stenosis, 3; aortic regurgitation, 1; arteriosclerotic cardiovascular renal disease, 4; hemiplegia, 1.

4. Diseases of the lungs:

   Pulmonary tuberculosis, 6; pulmonary tuberculosis and bone tuberculosis, 1.

5. Pelvic tumors:

   Myomata uteri, 6.

6. Diseases of the blood:

Anemia 1; Banti's disease, 1; myeloid leukemia, 1.

7. Diseases of the ovum:

Missed abortion, 2; hydatidiform mole, 1; acute hydramnios, quintuplet pregnancy, premature separation of placenta, 1.

8. Diseases of the skin:

Dermatitis herpetiformis, 1.

9. Miscellaneous indications:

Galdbladder disease, 1; colloid goitre and malnutrition, 1; multiple lipomatosis, 1; multiple varicosities, 1.

This series probably is a fairly representative series for our district. It is our opinion that medical societies should from time to time carefully review the indications for interruption of pregnancy, should familiarize the members with the various methods of interruption and should strengthen their own positions by attempting to accumulate statistics on interruption of pregnancy for the districts their societies represent.

The problem has always been with us and we should meet it with honest, sane and accurate thought. In its consideration we should insist upon an extraordinarily high ethical standard and the thought that it is a matter of concern for all branches of medicine.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Nerve Injury in Thyroid Operations

That the recurrent laryngeal nerve is not more often traumatized in operations upon the thyroid is due to the protected position of the nerve as it ascends to the larynx behind the thyroid in the space between the trachea and the esophagus. In partial thyroid removal it is ordinarily an inviolable rule that a layer of gland tissue be left lining the posterior capsule. In complete removal the posterior capsule alone is left. In leaving this the parathyroids are also left and the nerve is safeguarded. However, in spite of the almost universal observance of this rule it is estimated that there is nerve injury in 3 per cent of the cases operated upon. Injury is more apt to happen in cases of total than in cases of subtotal removal. For this reason thyroidectomy for cancer for universal adenomatous involvement and for congestive heart failure carries a somewhat increased hazard to the nerve.

The recurrent is the motor nerve to the larynx and when it is put out of commission there is loss of voice and obstructive dyspnea from closure of the air space in the glottis by the flaccid paralyzed vocal cords.

That it may be better guarded from injury at operation Lahey has recently advised identification and visualization of the nerve after the thyroid has been exposed before removal of the gland is begun. The nerve is so small that, even with his experience, he uses a magnifying glass to facilitate its recognition. Visualization in his clinic has materially lessened the incidence of, but has not entirely eliminated, nerve injury. No doubt routine visualization would result in a corresponding reduction in nerve injury over the country as a whole. However, this ideal can not be generally attained by the present generation of surgeons, for the necessary skill can hardly be acquired except in a large goiter clinic or by performing the operation many, many times on cadavers. Most surgeons have not seen a recurrent laryngeal nerve since graduation. Although the principle is obviously sound it will take time for its adoption by general surgeons, not connected with teaching institutions, who operate only occasionally upon the thyroid. The ureters are injured in total hysterectomy perhaps as often as the recurrent nerve is injured in thyroidectomy, but they are not visualized at operation by most surgeons. Although the common bile duct may be injured, much of the dissection in cholecystectomy is done without visualizing it. The very long right-rectus incision necessary for adequate visualization during dissection is so often followed by faulty healing and hernia that many think it unwarranted.

Paralysis of the recurrent laryngeal nerve may be temporary or permanent, depending upon the degree of injury. A crushed nerve will regenerate after several months and will function again. A cut nerve can not regenerate unless the ends are in apposition. In unilateral paralysis the uninjured nerve in time compensates so that loss of function is ultimately not noticeable. In bilateral paralysis obstructive dyspnea from the flacid vocal cords often makes tracheotomy imperative.

In cases of nerve injury Lahey advises secondary exploration of the operative field within three months. If the nerves are bound in scar they are freed. If cut, the ends are freshened and approximated by suture in the hope that regeneration will occur and function be restored. In cases where there is wide destruction of the nerve, if a suitable tracheotomy tube is worn a reasonably good voice will in time be acquired. If both cords are permanently paralyzed and the patient strenuously objects to wearing the tube, one cord may be resected to provide an airway through the larynx so that the tracheotomy opening may be closed. This, however, can be done only at the sacrifice of much of the already impaired vocal function.

Reference

Recurrent laryngeal nerve injuries, F. H. Lahey and W. B. Hoover, *Annals of Surgery*, October 1938, p. 545.

Goiter

(Peeley McClintock, *New York State J. Med.*)

Increased metabolic rates do not always mean a hyperthyroid state. A lowered metabolic rate does not rule out indications for surgery when tumor is found in goiter tissue. Only a small percentage of cases of hyperthyroidism present the classical symptoms. A hyperthyroid patient rarely has cold feet. Tachycardia not rapidly improved by rest and medication strongly suggests hyperthyroidism.

The examiner sits in front of the patient. The patient sits with head and body erect, shoulders relaxed. For the l. lobe, place hand over the shoulder, the thumb pressed against the larynx and trachea bringing the l. thyroid lobe into position, it can be palpated by the hand. Substernal hypertrophy may often be felt by having patient cough or swallow. Exophthalmic and adenomatous goiter has a firm, meaty feel; normal thyroid is soft.

GENERAL PRACTICE

Wingate M. Johnson, M.D., *Editor*, Winston-Salem, N. C

Write Your Congressman!

It is quite evident that H. L. Mencken's "specialists in other people's duties" who have the ear of the present Administration are doing their level best to fasten some form of compulsory health insurance upon the American people. Part of their campaign is a determined effort to break down the confidence of the people in the medical profession. It is hard to find a magazine now without an article or editorial condemning the private practitioners or berating the A. M. A. Apparently any hack writer in the country with enough sense to spell can get into print by denouncing the doctors, individually or collectively.

Is there nothing we doctors can do to counteract this flood of propaganda? Yes, there is. We can ourselves write our representatives in both houses of Congress, and can get our loyal friends to do so. The New York Public Relations Bureau recently published the result of a survey made of various legislators, to find how much attention was paid to letters from constituents. Of 256 replies, 95 said they were strongly influenced by such letters; 85, slightly influenced; 76 expressed no opinion. By contrast, only 25 said they were strongly influenced by petitions, 114 slightly, 117 gave no opinion. Senator Capper said that "twelve letters carry more weight than a hundred signatures on a petition." Furthermore, "lawmakers are influenced by the quality, rather than the quantity, of mail." Let it be remembered that it was the flood of individual letters that turned the tide against our President's attempt to enlarge the Supreme Court.

Without being egotistic enough to think it a model, but merely as a suggestion, I am offering the letter I have written our own representative and senators.

"Dear———

"As you probably know, there is a strong movement on foot to have Congress pass some sort of bill providing for compulsory health insurance, or socialized medicine. As President of the North Carolina Medical Society last year, I came into fairly intimate contact with most of the doctors of the state, and know that they are almost unanimous in opposition to such a measure. The same is true of the doctors of the United States generally. This statement is not a dogmatic one, but is based upon my knowledge of the temper of the House of Delegates of the American Medical Association, of which I was a member for several years. May I remind you, in considering this bill, of the following conditions? First, that the cost of compulsory health insurance for the workers of America would add at least three billion dollars to an already oppressive tax burden. Second, that socialized medicine began in Germany in 1883, and was the entering wedge for totalitarianism in that country. Third, that health conditions in America are better than in any country with socialized medicine. Fourth, that while I know you are as free from yielding to pressure groups as any man in Congress, there has been a tremendous concerted wave of paid propaganda to force this unwelcome measure upon the country. Fifth, that while the doctors have not been as vocal as the propagandists, they are strongly opposed to the proposed measure, and are more determined than I have ever known them to be to make it an issue, if necessary, in the coming election. Sixth, that the doctors of America are willing to recognize the need of the lower income group for medical services at reasonable rates, and have already begun to make provision for such services. Taking all these things into consideration, I sincerely hope that you will give the matter very careful consideration, and try to see it from the standpoint of the profession."

With best wishes,

Sincerely yours,
(Signed)

Oil-Soluble Anesthetics in the Treatment of Anal Fissure

(L. A. Smith, Topeka, in *Kansas Medical Journ.*)

The ulcer or fissure is usually situated beneath the anorectal line so that it may lie within the grasp of the anal muscular ring. Defecation gives pain. Bleeding may be followed by painful spasm of the sphincter muscles.

Fissure of the simple form is only a break in the lining of the anal canal usually found early and acute; the complicated fissure has induration of the ulcer bed, the result of scar tissue, and the sentinel pile due to hypertrophy of perianal skin. Scarring, skin tab, severe spasm, hemorrhoids, papillitis, dryptitis etc. require operative treatment.

For Simple Fissure: The patient in the right or left lateral Sims or the lithotomy position, the perianal skin is cleansed with alcohol and painted with tincture of iodine. The ampules of anucaine are warmed and 10 c.c. aspirated through a cannula or large needle into a dry syringe, the cannula or large needle then being replaced by an 18 or 20 gauge 2½ in. needle. A wheal with 1% novocaine is first raised 1 to 1½ inches behind the anal verge in the midline and through this the long needle is inserted and directed laterally into peri-anal tissues at a depth of 1 to 1½ in. so that the branches of the inferior hemorrhoidal, fifth sacral and pudendal nerves are reached as they traverse the ischiorectal fossa. About 4 c.c. of anucaine are injected on one side, the needle retracted, not withdrawn, and the opposite side injected. The finger in the anus with the flexor surface toward the fissure, 2 c.c of anucaine injected immediately beneath the fissure bed, by even flow as the needle is advanced to distribute the solution in a fan-like manner and avoid pooling. Injection of anucaine into the skin or the mucosa, or pooling, may result in slough.

Sufficient anesthesia may be had by topical application of 10% cocaine for 5 minutes, or by underlying the fissure with 1% novocaine to permit insertion of the finger before anucaine injection is started. The cot-covered, lubricated finger hooked over the anal ring protects against perforation of the bowel wall by warning of the approaching needle. The inserted finger must be kept still during the injection and contamination of the peri-anal skin guarded against.

Anucaine may be injected directly into the sphincter muscle.

Following the injection of anucaine the sphincters are readily dilated and the fissure exposed in its entire extent. Dilation—not divulsion—is important. The entire fissure bed is now sparked with Oudin current, and this current only and sufficiently so to destroy the fissure bed. The slough is slight and the resultant scar elastic. Simply keep the wound as clean as possible. Anesthesia with relaxed sphincters is afforded by anucaine for 10 days to 3 weeks.

For Complicated or Chronic Fissure: The fibrosis is usually posterior but may involve the entire anal circumference and cause stricturing of the anal canal.

The usual pre-operative catharsis and sedation. Anesthetic may be caudal, local, spinal or general but anucaine should always be used, injected as described under simple fissure. Caudal anesthetic, often combined with sacral, is ideal. If local is used aqueous novocaine sufficient to give good anesthesia must be used in addition to anucaine. The procedure should be performed in the hospital.

Peri-anal suppuration constitutes a definite contra indication to the use of oil soluble anesthesia. Other contra-indications are nephritis, diabetes, senility, anemia etc. which cause decrease in tissue resistance. Only a superior preparation from ampules is to be used and the simple rules of injection rigidly followed. If induration follows injection the hardened area should not be incised as remission without necrosis or drainage usually results if the area is treated conservatively.

The cutting may be with the cold knife or better with electro-surgery. After complete dilation and exposure the fissure is excised not encroaching on the sphincters. The incision is carried back into the post-anal skin, the edges trimmed away producing a triangular drainage wound at least 2½ inches on all sides. The deeper the cut through the sphincters the further back should the posterior drainage be carried. The degree of contraction of the anus at the original digital examination acts as a guide to the amount of division of the sphincters. Completely divide the fibers of the subcutaneous external sphincter which is often erroneously regarded as the entire external sphincter. If sufficient relaxation is not obtained, proceed cautiously into the deeper portions of the sphincter apparatus inserting the finger after each small cut until the desided result is obtained. It may be necessary to completely divide the fibers of the superficial and deep layers of the external sphincter to give complete relief. The usual tendency is to make too superficial divisions. The pecten (fibrous) band must be divided.

INTERNAL MEDICINE

Paul H. Ringer, A.B., M.D., F.A.C.S., *Editor*
Asheville, N. C

Sulfapyridine in the Treatment of Pneumococcic Infection

During the last few months the medical world has been agog as to the therapeutic possibilities in pneumonia of sulfapyridine, made in this country by Merck & Company, Rahway, New Jersey, under the trade-name dagenan. This substance differs from sulfanilamide in that one hydrogen atom of the sulfamide group is replaced by a basic pyridine group.

In May, 1938, Whitby reported experiments with sulfapyridine based on work with pneumococcic mice, and concluded from his observation that this drug was much less toxic than sulfanilamide. In July, 1938, Evans and Gaisford, of Birmingham, England, reported 100 cases of lobar pneumonia in which the drug was used, and 100 control cases, alternate hospital admissions; and they decided that the drug was of definite value.

In the *Journal of the A.M.A.* of February 11th, Barnett *et al* reported on 23 hospital cases:

"Our series includes fourteen cases of pneumonia three complicated by . . . empyema, one . . . by purulent pericarditis; four cases of bronchitis; three of pneumococcic peritonitis; one of influenzal meningitis, and one of subacute bacterial endocarditis (*Streptococcus viridans*). The clinical picture in each of these cases, with the exception of the last two mentioned, suggested pneumococcic infection. Such an etiology was confirmed by culture in the cases of empyema and those of peritonitis but in only two cases of pneumonia. The diagnosis of pneumonia in every case was confirmed by x-ray or fluoroscopic examination."

They then gave protocols of the 23 cases in considerable detail. In every case they followed up the blood concentration of sulfapyridine by the method of Marshall. Methemoglobin was determined by the spectroscopic method described by Wendel.

Their dosage of sulfapyridine for infants and children:

Age	1-3 mos.	6 mos.-1 yr.	2 yrs.	5 yrs.	12 yrs.
Dosage	0.15 Gm. every 4 hours	0.3 Gm. every 4 hours	0.3 Gm. every 3 hours	0.6 Gm. every 4 hours	0.9 Gm every 4 hours

The results in uncomplicated pneumonia were excellent, but they very justly call attention to the mortality of lobar pneumonia in children, usually 3 to 5 per cent. They say:

"The dramatic fall in temperature, which has occurred in every case of pneumonia thus far coming under treatment with the drug within 28 hours after the initial dose, might have been due to a spontaneous crisis. It is certainly not unusual for the crisis to occur within the first 24 hours after the patient enters the hospital, since the increased toxicity developing prior to the crisis is often the very reason that the patient is brought to the hospital. Nevertheless a mere inspection of statistics relative to the day of crisis in lobar pneumonia would make it unexpected even in only 11 cases for this to occur ro regularly and if it is found to occur in a much larger number of cases more substantial importance may be attributed to it."

They do not find the drug particularly toxic, and mention that cyanosis may be prevented or controlled by the use of methylene blue. They believe that if definite improvement should not occur in 24 to 36 hours, specific serum therapy, if available, should be instituted if the clinical condition indicates its use.

In the same issue of the *Journal of the A.M.A.* is an article by Flippin *et al.* on the treatment of pneumococcic pneumonia with sulfapyridine in adults. They mention the fact that in Evans' and Gaisford's publication previously referred to, the mortality in the 100 control cases was 27 per cent, while in the 100 treated patients the mortality was 8 per cent, and six of these patients failed to receive the amount of the drug considered to be adequate.

Flippin *et al* treated 100 patients with typed pneumococcic pneumonia, resulting in four deaths, three of which were type III infections. In the series there were eight cases of bacteremia with one death. Surely these are excellent figures, unmatched by any reports of cases treated with serum. Their criteria for accepting patients for treatment were: first:

"That a diagnosis of pneumonia be definitely established by the clinical history and physical examination. An attempt was made to type sputum from each patient, and only the case in which pneumococci could be typed from sputum or blood culture are included in the present report. In 64 per cent of the cases the diagnosis was confirmed by x-ray examination. In the remaining cases the severity of the illness and the lack of portable x-ray apparatus prevented roentgenologic study. Blood cultures were taken in all but four of the cases,but some of these were not obtained until a few hours after treatment had been started."

Second:

"That the patient be sufficiently accessible so that he could be followed with daily visits from one or more members of the group. In only three instances did we take the responsibility of permitting other physicians to manage the course of therapy, and in these cases there were extenuating circumstances."

In the majority of cases the initial dose of 2 Gm. was followed by 1 Gm. every four hours until a total of 25 Gm. had been administered.

The authors also say:

"It is appropriate to call attention to the fact that three of the four deaths occurred in the type III cases, a mortality rate for this group of 21.4 per cent. This would suggest that in type III pneumonia the combination of sulfapyridine with specific antibacterial antiserum might prove to be the therapeutic method of choice. A decision on this point must be reached with caution, however, because it is conceivable that in man the effects of rabbit or horse serum and sulfapyridine might oppose each other. It would be unwise, without further study, to take it for granted that specific serum plus sulfapyridine would be better than the drug alone."

The only untoward effect of the drug was nausea, which was very frequent, and most intense and most likely to produce vomiting during the first 24 hours of therapy. The authors found the following means of aid in treating this symptom:

"Small amounts of sodium bicarbonate an hour after ingestion of the tablets.

Mixing of ground-up sulfapyridine tablets with water, fruit juices or milk. A glass of cold water containing the white of an egg and the juice of a lemon one-half hour before giving the drug. In individual cases each of these adjuvants appeared to improve the tolerance for the drug.

The passage of a Jutte tube into the duodenum, permitting the introduction of the drug into the small intestine. This was done both with persistent vomiting and with extremely sick patients who could not take the drug by mouth.

Omission of the drug for one or two doses. The temporary relief of gastric irritability so achieved often resulted in cessation of vomiting.

The introduction of sodium chloride and dextrose intravenously, which is advisable in all patients who show nausea or vomiting."

They found lack of correlation between blood sulfapyridine level and the therapeutic effect: the level varied from 1 mg. to 18 mg. per cent and many patients with blood levels below 3 mg. made satisfactory recoveries from pneumonia. From their experience they believe:

"It would seem improbable that the development of a blood concentration of free sulfapyridine of 10 mg. per 100 c.c. or above causes any more rapid primary chemotherapeutic effect that that which occurs with a blood concentration of from 1 to 2.8 mg. We do not believe that these data are sufficiently complete to warrant reducing dosage in individuals who show a higher degree of distribution of free sulfapyridine, or increasing dosage in patients who show less complete drug absorption."

In one large hospital which the editor visited not long ago, the staff was so enthusiastic about sulfapyridine in pneumonia that they hardly dared talk about it. To be sure, they had treated but

eight cases. They had, however, had no deaths and three of the cases were type III.

The drug is not yet on the market, but by writing to Merck & Company, Rahway, New Jersey, and requesting a blank for filling out, practically any reputable physician with laboratory facilities at his command can obtain the drug. It is not a drug to be used indiscriminately or without close supervision, and already warnings are coming out against it, as shown by a letter in a recent number of the *Journal of the A.M.A.* from Bullowa and Plummer cautioning the profession not to get too enthusiastic nor to abandon the time-tried specific serum therapy. It would appear, however, from the reports in the literature that the drug is going to mark a great advance in pneumonia therapy. Its administration is exceedingly simple as compared to the rather complicated mechanism of giving serum, and it would deserve certainly a prolonged tryout in patients allergic to horse serum. The medical world awaits with consuming interest further clinical results with this new therapeutic agent for a very prevalent and fatal disease.

PUBLIC HEALTH

N. Thomas Ennett, M.D., Health Officer, Greenville, N. C.
Editor

Duration of Immunity Conferred by Typhoid Vaccine

In the February number of the *American Journal of Public Health* is an article describing an effort to determine the best method of immunizing against typhoid fever. This work was done in the laboratory of the Army Medical School, Washington, under the supervision of Drs. J. F. Silver, and G. C. Dunham.

"Summary

"A group of 200 persons who had never been vaccinated were given three subcutaneous injections of 0.5 c.c., 1 c.c. and 1 c.c. respectively of the typhoid vaccine. A group of 100 individuals who had received from one to several courses of the typhoid vaccine from 2 to 10 years or more prior to the time this study was made were re-vaccinated with one intracutaneous dose of 0.1 c.c. of typhoid vaccine.

Two weeks after vaccination, the blood sera of those re-vaccinated with a single dose of 0.1 c.c. of the vaccine intracutaneously and of those vaccinated for the first time with three subcutaneous injections of the vaccine protected mice against a virulent strain of *E. typhosa* to approximately the same degree.

The results obtained indicate that the immunological response of the individual to revaccination with one dose of 0.1 c.c. of vaccine intracutaneous injections of 0.5 c.c., 1 c.c., and 1 c.c., of the vaccine at weekly intervals.

The reactions observed following re-vaccination with 0.1 c.c. of typhoid vaccine are mild as compared with those frequently produced by subcutaneous injections of the vaccine."

"Conclusions

1. Re-vaccination against typhoid fever of previously immunized persons with one intracutaneous dose of 0.1 c.c. of typhoid vaccine produces an immediate immunological response which is comparable to that following original vaccination with three subcutaneous injections of the vaccine.

2. As compared with re-vaccination with three subcutaneous injections of the vaccine, re-vaccination with one small intracutaneous dose of vaccine is a simple and time-saving procedure.

3. The reaction following the intracutaneous injection of 0.1 c.c. of typhoid vaccine is relatively mild as compared with that frequently produced by the subcutaneous injection of 0.5 c.c. or 1.0 c.c. of the vaccine."

If other experiments confirm the conclusions of these investigators, typhoid vaccination will be further popularized and the incidence of typhoid fever will be further reduced.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Measles Modification Failure

On June 6th, 1934, one of my 3-year-old patients weighing 34 pounds was intimately exposed to measles. Because of her state of health it was deemed unwise to allow her to have measles at that time, if the disease could be prevented. Only 15 c.c. of convalescent serum was available and it was given her on the fourth day after exposure. A larger dose would have been preferred. In 10 days time I saw her again because of a rash over her face and neck which was thought to be very mild measles. She had a temperature of 100, a mild coryza, a slightly inflamed throat and an occasional cough. The rash spread over the upper part of the body and in four days was about gone. With the mildness of the attack we felt relieved and stated that it was a case of modified measles.

Two months ago her older sister developed typical measles. Her two younger brothers were given 2 c.c. each of immune globulin (measles) to modify their subsequent attacks of measles. The first-mentioned child was not given globulin since it was

thought that she had had a modified attack, and that this had given permanent immunity.

Exactly two weeks after she had been exposed to her older sister's measles, this child developed a severe attack of measles, with otitis media, cervical adenitis and severe bronchitis. She was quite ill for a week. The two younger brothers developed modified measles in the usual time and got along beautifully.

This case is not reported as the original failure of modified measles to afford permanent protection. Others have reported such failures. This is my first such failure, so I am not prepared to state whether or not modified measles following immune globulin affords complete protection. In this instance convalescent serum was used. Immune globulin probably had not been introduced into this part of the country four years ago.

An additional comment may be added here. Without having extensive statistics to back up this statement, it is offered for agreement or disagreement on the part of the reader. It has been my experience that a 2-c.c. injection of immune globulin in many instances seems to prolong the incubation period of measles. In no instance has there been any severe reaction from its use. Everything considered the results have been satisfactory when used to permit modified measles. To completely protect, doses of 6 to 12 c.c. seem to be advisable, and always by or before the fourth day following exposure. Its use therapeutically has been so infrequent that no comment can be offered which would be of value.

Modified measles does protect against future attacks of measles, and to me this is the exception. It must not be overlooked, however, that a person can have more than one attack of measles.

Scarlet Fever Immunization

(C. B. Summers, M.D., Kansas City, Mo., in *J. Kansas Med. Soc.*, Feb.)

The scarlet fever which we have been seeing in the past five years has been very mild with no complications. The first injection of the serum frequently would be more severe than having the disease. With the uncertainty of the immunizing qualities, most doctors have abandoned its use.

For the past six years I have had the medical supervision of some 125 to 150 children in an orphans' home. All children on admission receive protection against smallpox, diphtheria, whooping cough, typhoid fever. For the past four years all children have received scarlet fever immunization. There have been but two cases of scarlet fever, these in 1937. Scarlet fever was prevalent in all sections of the city. In the school which these children attended there were many cases but our home was free of cases. After a month of the epidemic, it occurred to me to analyze the cases which we were diagnosing as influenza and sore throat. Upon close scrutiny it was definitely decided that these children were suffering from scarlet fever but were not being diagnosed as such because there was no rash. The rash as you know is the sole means of a positive diagnosis. Of so-called sore throat, there were 21 cases in all. Of this number two cases had mastoiditis, five had grandular enlargement and four cases had otitis media purulenta. Looking back it is my firm conviction that they had scarlet fever. The unfortunate thing about these sick children was the fact that they were not quarantined and besides they were sent back to school too soon, thus being a means of spread of the disease to other children.

Having read the several articles on the inadvisability of giving the scarlet fever serum, and due to my personal experience during the past epidemic, I am firmly convinced that to immunize children against scarlet fever is not a practical procedure nor is it justifiable, when all that is accomplished is to immunize them against the rash and not the toxic symptoms which occur from the infection. As scarlet fever has been a rather mild disease in the majority of cases in the past few years, and due to the fact that the antitoxin is specific in the majority of severe cases of scarlet fever, we are of the opinion that to obscure our means of diagnosis, which is the rash, by giving the scarlet fever serum, is to do more harm than would result if the child had the disease.

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

What Do Your Hospital Meetings Mean To You?

For a number of years the writer has been attending State, Tri-state and National hospital meetings. He has attended them in cities ranging in population from 5,000 to 1,000,000, the attendance at the meetings ranging from 50 to 5,000 and now he asks himself, "What is it all about?"

Let us first consider the delegates that attend. They come from the small and from the large hospitals. Some are young and some are old. Some are misers and some are spendthrifts. Some are native and some are foreign-born. Some are good administrators and some are poor administrators. Some are selfish and some are generous. Some are dictators and some democrats. Some want glorification and some want only to render self-sacrificing service. Some are hospital owners and some are employee operators. Some are paying their own expenses and some have expenses paid by the institutions they are supposed to represent. There may be other types of individuals who attend but I think we shall have our hands full with these.

It does not require a master mind then to see that these various personalities require various programs to satisfy. It would require, however, many master minds on the program committee to arrange a program to suit all. What can be done about it? The safe political rule is to attempt to satisfy the majority and ask for indulgence on the part of the minority. This, however, does not

mean the counting of heads. It means the counting of brains and institutions.

Let us attend a session at this point. The meeting is opened by the chairman or president. Usually the early morning sessions are poorly attended, for one reason or another. Many of them we know without further discussion. The first paper may be by a faithful member but he or she is presenting a subject with which he or she is only faintly acquainted. For instance, the employee administrator may be attempting to tell the owners how to pay for a hospital. The dietitian may be attempting to give the instructress of nurses a new slant on discipline of nurses. The medical man might be attempting to tell the operating room supervisor how to keep in sterile material, and so on it may go. No matter how far-fetched or unsound the argument may be those present in the same group will either say nothing or agree wholeheartedly with the speaker.

Instead of knowledge being pitted against ignorance, the informed against the uninformed, it is group against group, business manager against nurse, nurse against doctor, dietitian against historian. No one seems to think that what he or she says will be remembered long enough for the audience to get out of the assembly hall. To be sure a great deal of it will not be remembered but too much will be remembered. That part that is not based on knowledge and experience of the subject discussed is dangerous and damaging both to audience and to speaker. When a wise man talks he says something and sits down. When a fool talks he says nothing and keeps on saying it.

What will the remedy be? First let us call a spade a spade. If a poor paper has been presented let us say so. It will always help the person who presented it. In the future he will make an honest effort to do better. Most likely he will, too. Another thing to be remembered by the program committee is that no one should be allowed to present a paper on a subject about which he has had no experience in a practical way. All papers should be presented to a censorship committee before inflicting them on the public. On the part of those who prepare papers, let them stick to facts. Sooner or later your sins will find you out, but often not until they have done damage.

If the hospital meetings are to mean much let selfishness stay at home, leave dictators off of the programs and especially out of the officers' chairs.

Your hospital meeting should not be turned into a union meeting. Employees of hospitals are not union members. That is not the place to attempt to fix salaries and hours. It should be the place to learn how to give more good hospital care for less money to the sick of our land.

THERAPEUTICS

J. Fred Nash, M.D., *Editor*, St. Pauls, N. C.

Observations on the Use of Chaulmoogra Oil in Arthritis

(Camp Stanley, Washington, in *Med. Ann. D. C.*, Feb.)

In 1933 McIhenny announced the results of treatment of 30 patients, all of whom presented positive radiologic evidence of the atrophic, hypertrophic, or mixed type of arthritis, with bi-weekly intramuscular injections of from 3 to 5 c.c. of crude chaulmoogra oil combined with olive oil in proper proportion, and from 0.3 to 1.6 c.c. in enteric capsules orally at meal times. Many are said to have been freed from all symptoms with restoration of function, while in others the disease was checked and the deformity minimized. There was no return of the pathologic condition in any of them. A number of other favorable reports have been made.

Within the past three years I have attended approximately 200 cases and have selected 50 patients to report, 39 females and 11 males. The majority of these patients had undergone every conceivable form of treatment for their malady, without improvement.

At the outset, each received a thorough physical examination, routine examination of stools, urine and blood, and in those cases where theoretically there should have been calcium deficiency, there was none. When practicable, roentgen studies were made. All were ambulatory cases.

The skin at the site selected was scrubbed well with cotton dipped in alcohol, metaphen (1-200) applied, massaged gently before and after injection. Graduated doses of from 1 to 5 c.c. were given with either a 5 or a 10 c.c. syringe fitted with a needle of caliber easily admitting the crude chaulmoogra oil mixture, in proportions used in treatment of leprosy, and dispensed in 30 c.c. vials with rubber caps. Enteric globules containing from 2 to 5 minims for oral administration. Both deltoid and gluteal areas were utilized in rotation. Injections were made every 3 or 4 days, even though it became necessary occasionally following attainment of the maximum of 5 c.c. to reduce to 1 c.c. since it was deemed particularly essential to continue to the point of saturation. Absorption was promoted by selection of the site in the body of the muscle and not near its osseous insertion or the fascial planes.

Commencing with doses of 1 c.c. the local reaction was slight. When the maximum dose was attained, certain patients had fever, headaches, malaise, and, more rarely, severe uriticaria over a wide area around the site of injection, which usually subsided in 24 hours and was followed frequently by relief from arthritic pains. At this juncture the average patient assumed a more optimistic attitude toward his infirmity and was eager to continue the treatment.

Frequently no relief was experienced until after as many as 25 injections had been given, while in one instance 78 were necessary. A definite response was obtained in some cases after 3 injections. After an interruption of 10 days an initial injection of 1 c.c. must again be made, with gradual progression as before until the maximum of 5 c.c.

Oral administration of the oil depended mainly upon the age of the patient and the acid character of the gastric contents. Persons over 60 years of age who received the oil by mouth suffered from digestive disturbances followed by emesis within 30 minutes in some instances while those with achylia or severe hypochlorhydria did not appear to tolerate the globules. In a few cases where there was biliary disease the intramuscular injections had to be discontinued because of disturbance of the biliary

function. Oral administration is positively contraindicated in cholecystitis.

In the early stages of treatment the articular symptoms were somewhat intensified, and regions previously free from symptoms became the center of mild disturbance.

The most satisfactory results for patient and physician alike were obtained in the acute and subacute types. However, truly astonishing relief from pain and increase of motion in the joint were noted in cases in which the ankylosis was incomplete.

While the use of chaulmoogra oil in arthritis is empirical, the favorable experience which has attended its employment by the author and others appears to warrant a continuance of its use as a therapeutic agent in all forms of that disease.

HIGH-PROTEIN DIET IN PEPTIC ULCER

(CHARLES WINDWER and M. J. MATZNER, Brooklyn, in *Am. Jl. Digestive Diseases*, Jan.)

A high-protein diet was used in the treatment of 40 patients with peptic ulcer. The regimen consisted of a mixed diet with hourly feeding of gelatin between meals. Symptomatic relief was noted in 90% of patients studied. This method, though not considered as a specific, has a definite place in the management of peptic ulcer, especially so in cases that do not respond to drug therapy.

TUBERCULOSIS

P. P. McCAIN, M. D., *Editor*, Sanatorium, N. C.

FEDERAL AID REQUESTED FOR TUBERCULOSIS CONTROL

SOME three years ago the Southern Tuberculosis Conference sponsored a movement to procure Federal aid for the control of tuberculosis. Originally the plan called for aid especially for Negroes, since practically all Negroes are indigent and since there are so few beds, either public or private, for the use of Negroes. It was proposed that the Federal Government assist States, up to 80% of the cost for sanatorium construction and up to 50% of the cost of maintenance for the new beds. Later the plan was changed to include all indigents of whatever race and specified that the money be spent in States where it was most needed, and that the facilities in each State should be increased up to at least one bed for each death from tuberculosis. Since most of the States in the North and the West have already one or more beds per death, this plan would especially aid the South. Although at first not approving the plan, the National Tuberculosis Association finally gave it its blessing and sponsored a bill which was introduced in the Senate by the late Senator Robinson only a few days before his death. Had he lived there was a possibility of the passage of the bill.

Last year the National Tuberculosis Association, with the hearty approval of the U. S. Public Health Service, sponsored a much more extensive and far-reaching program of Federal aid for tuberculosis control for States, counties and cities. After careful studies the National Association and the U. S. Public Health Service agree that there is very little hope of controlling tuberculosis until there are at least two beds per death, and until necessary facilities are provided for early diagnosis through the periodic x-ray examining of contacts.

The provision of sanatorium beds up to two per death in each State will necessitate the construction of 40,000 additional beds. The plan proposes that these facilities shall be provided within a period of six years. The South would be benefited most by the operation of this plan, also, since the Southern States have considerably less than even one bed per annual death. It is proposed that the funds to be provided shall be allotted through the Surgeon General to the several States on the basis of

1. Population
2. The extent of the tuberculosis problem
3. Existing facilities for the care of tuberculous patients
4. The financial needs of the respective States.

To carry out these purposes a bill has been prepared calling for an appropriation of $7.750,000 in 1940, $33,500,000 for 1941, $37,000,000 annually from 1942 to 1944, and not more than $17,500,000 annually for 1945 and thereafter.

It may be a question, even in the minds of some Southerners, as to whether or not Federal funds should be used to assist States in fighting tuberculosis even if our section should get relatively a large share of the appropriation.

Tuberculosis, more than any other infectious disease, has become a National problem. The migration of Negroes to Northern cities and the tremendous number of tourists in all sections of the country as result of the greatly improved transportation facilities have brought about such a commingling of the population of all sections of our country as to make a serious tuberculosis problem in one State, or one section, a reasonable problem for the Federal Government. Since also the Federal Government contributed largely to the eradication of tuberculosis in cattle, is it not entirely proper for the same Government to assist in its control in human beings?

Why not spend for this purpose a part of the vast sums that are being spent for building roads and palatial post offices? It is thought that operation of such a plan would, in a few years, reduce tuberculosis to one of the minor causes of death. Each year tuberculosis costs this country several times the amount of money that would be spent. The passage of such a bill would not only be humanitarian statesmanship, but also a splendid business investment for our country.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior
JAMES K. HALL, M.D. Richmond, Va.

Eye, Ear, Nose and Throat
EYE, EAR AND THROAT HOSPITAL GROUP Charlotte, N. C.

Orthopedic Surgery
O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. Charlotte, N. C.

Urology
HAMILTON W. MCKAY, M.D.
ROBERT W. MCKAY, M.D. Charlotte, N. C.

Internal Medicine
P. H. RINGER, M.D. Asheville, N. C.

Surgery
GEO. H. BUNCH, M.D. Columbia, S. C.

Obstetrics
HENRY J. LANGSTON, M.D. Danville, Va.
IVAN M. PROCTER, M.D. Raleigh, N. C.

Gynecology
CHAS. R. ROBINS, M.D. Richmond, Va.

Pediatrics
G. W. KUTSCHER, JR., M.D. Asheville, N. C.

General Practice
WINGATE M. JOHNSON, M.D. Winston-Salem, N. C.

Clinical Chemistry and Microscopy
C. C. CARPENTER, M.D. Wake Forest, N. C.
R. P. MOREHEAD, B.S., M.A., M.D., Wake Forest, N. C.

Hospitals
R. B. DAVIS, M.D. Greensboro, N. C.

Cardiology
CLYDE M. GILMORE, A.B., M.D. Greensboro, N. C.

Public Health
N. THOS. ENNETT, M.D. Greenville, N. C.

Radiology
ALLEN BARKER, M.D.
WRIGHT CLARKSON, M.D. Petersburg, Va.

Therapeutics
J. F. NASH, M.D. Saint Pauls, N. C.

Tuberculosis
P. P. MCCAIN, M.D. Sanatorium, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

Against Emulating Those Who Are Not Doing As Well as We Are

THROUGH the years of agitation for radical change in the method of rendering medical service to our people, this journal has steadfastly maintained 1) that there is no need for such radical change; 2) that the people do not desire such radical change. This journal has never placed itself in the absurd position of denying that the present system has imperfections. It has said, and still says, that our present system has fewer imperfections than exist in the supply of any other necessity or comfort of life, *and* that the medical profession is, and has all along been, striving earnestly and effectively to remedy these imperfections.

Those who, for a great variety of reasons, started and keep up agitation for radical change in the present method of meeting the health needs of our people have never made out their case. When it is pointed out to these captious critics that under our system, the records on sickness and time lost from work allegedly because of ill health and death rates are more favorable than are such records in any country that has adopted the methods the agitators seek to force on us, these agitators have made no answer. Ignoring the facts which clearly show that under our system our people are more contented, enjoy better health in body and mind, and that they live longer than is any people having the system they advocate, they continue to clamor for a change to the descredited system. And their disingenuous propaganda impresses on the ignorant the idea that medical care and doctors' services are one and the same; that to say that a certain illness cost a family $100.00 means that the doctor was paid $100.00.

In this issue both sides of the case are presented.

The statement that the partial Socialization of Medicine in Britain is pleasing to the great majority of British doctors is one that would be hard to prove or disprove. Reading the *British Medical Journal* and *The Lancet* seems to show that it has been accepted as an accomplished fact. The proponent of Socialized Medicine says that the wealthy have scant respect for their doctors. Our own opinion is quite the contrary; but, even if Dr. Schäffle were right about this, would he expect Socialization to improve the regard in which the doctor is held?

The fact that Koch, Laveran, Gorgas, Wood and others were not mediocre and were able to do their life work in dignity and respectability is quite beside the point. They did not do house-to-house practice. Dr. Schäffle does not tell us why there was only one general practitioner of medicine

on the Committee on the Costs of Medical Care—a body made up mostly of non-doctors, and most of the doctors Public Health officers or teachers, hospital administrators or full-time teachers—few of them with any experience in general practice. And the Committee concluded that the great majority of the practice of the country was being done, and that more of it should be done, by general practitioners! Then how can any one justify the picking of only one general practitioner and 16 specialists to find out how poor medical practice is and how to improve it? *Sixteen* to represent 20 per cent of the practice of medicine and surgery, and *one* to represent 80 per cent, is carrying the Bryan ratio beyond anything the Boy Orator of the Platte would have dreamed of. Finally, as to the Committee on Costs of Medical Care, for its directing head was chosen a man who had already written and had printed a book which anticipated the "findings" and carried substantially the "conclusions" of the Committee!

Dr. Joe Greene did speak before the Section on Public Health and Education of the Medical Society of our State in 1917. It is also true that Dr. Greene's anticipation of reduction in British sick and death rates and in time lost from work have not been realized. It is true that Dr. Greene said that the day following the enactment of this law 10,000 English physicians registered on the panel. What else was there for them to do? Not many of us, Dr. Greene, can move out of North Carolina because we have failed so far to keep your Rambling Robert from misrepresenting us in the Senate of the United States.

All of us have the utmost respect for Dr. Greene's opinions and affection for himself; but in the light of subsequent history we feel certain that his expressions on this subject in 1917 do not represent his opinion today. And, be it remarked further, the doctors who do house-to-house practice are in better position to know how the practice of medicine would be affected by the passage of such laws, than do the specialists who go for weeks without entering a home in their professional capacity.

If our memory be not at fault Dr. Haven Emerson signed the majority report of the Committee on the Costs of Medical Care. Dr. Schäffle alludes to that fact. But, now[1] Dr. Emerson says:

"What has been published as a National Health Survey, was nothing of the kind, but merely a drag-net hunt for chronic sickness, which was, of course, found in considerable amount. Also, what was publicised as a National Health Conference was not a conference at all but a sounding board before which a hand-picked, and certainly in the main a preconvinced, group of invited guests listened to the report of a technical committee, with the doubtful privilege of extemporaneous comments but no opportunity for collective consideration or adoption of the slightest change in the readymade proposals which they were assembled to endorse."

"We are now the possessors of better general health, are less afflicted with disease known to be preventable, are more secure in the survival and growth of our offspring to maturity, and have an average expectancy of life greater than that of any population group in the history of man, comparable in size, variety of races, and distribution in age, occupation, economic and climatic conditions. We are today as this year draws to its close at the very zenith of a march of progress towards national health. Never before in this or any other continent have any 130,000,000 people recorded such low death rates as will be reported in the United States for the year 1938, for all causes, for tuberculosis, typhoid, diphtheria, and infant mortality. Not in our time has maternal mortality been so low, or the death rate from pneumonia."

"It takes longer than one presidential term or even two, for federal agents to learn as much about the peculiarities of needs and variety of factors affecting health in the 48 states as the competent officers of local government have long known. Nothing new has been proposed, only a larger grant of money aid to the states from which the money was originally taken to the detriment of their own local program."

"Furthermore, in the spirit of thrifty taxpayers, and with the wisdom of long experience in personal medical relationships, the professional associations warn against any such public expenditures for treatment of diseases of women and children as can best be carried on by the private relationship between doctor and patient."

"When and where need exists, then and there additional hospitals should be built, ... but that careful and detailed first-hand studies of each community concerned be made which reveal such need and that the hospital when built can be properly administered and maintained."

"Furthermore, the American Hospital Association calls the attention of the federal government to the economy of using existing voluntary hospitals, where these are well administered and of good medical standards, instead of building new hospitals out of tax moneys to compete with those supported by voluntary contributions and earnings."

"No system of payment for medical care of the indigent sick so far proposed or put into effect will equal in its cost to the taxpayers what the physicians in practically every county of the United States have been giving at the most modest schedule of charges, freely year in and year out. What the medical profession is primarily concerned with is that the community accept the burden of cost which their own wealthy patients and private philanthrophy can no longer carry."

"That some people who need medical attention do not receive it will always be true, but the reasons for this are not largely, if at all, inability of these sick to pay for the cost of necessary treatment, but chiefly results from ignorance, superstition, and misinformation, growing out of religious beliefs and faith in the promotion of advertised medicaments."

"It is obvious that all the most responsible professional opinion representative of the medical sciences and administrations is to the effect that for most if not all fractions of our population now, compulsion to participate in a federal or state scheme of insurance for personal care in sickness is undesirable."

---

1 Before the Annual Meeting of the New Jersey Health and Sanitary Association, Asbury Park, November 18th, 1938.

"We must expect on the experience of other countries that if government actually operates on any compulsory insurance scheme a considerable amount of the services for the sick for people at low income levels, the cost of medical care of these people will be largely increased, perhaps doubled by the cost of administration!

We have good reason also to suspect that the quality of care will deteriorate and that the amount and duration complaints of illness and the amount of medicaments used will all markedly increase."

It is as much the duty of the medical profession to warn the public against extravagant and utopian schemes of all inclusive commercial or governmental provision of medical care with their inevitable inferiorities, as it is to assure a constantly improved standard of personal services to the sick on the basis of private economic and professional relationship.

So it would seem that Dr. Emerson has looked further into the matter and been convinced that the doctors of this country are doing a good job, that we should not be abused but applauded; and that, for working out better and better methods of meeting health needs it will be wiser and juster to depend on our evolutionary plan than on revolutionary plans such as have been adopted by Germany and England.

The available figures on death rates are: Germany 12.3, U. S. 10.7. And in Germany 40 per cent of the money collected to pay doctors for their services is paid to political appointees for "administration."

Dr. Schäffle cites what he calls a "good example of the unnecessary cost of care": A friend who needed attention to an ingrowing toenail, inquired of a general hospital for the cheapest accommodations in a ward for one night. Then he called his doctor, who advised him to enter as an outpatient.

The crux of the matter lies in the fact that this man didn't have gumption enough to know that there was no reason for his going to a hospital. Most likely his doctor advised him to enter only because the patient had decided that his toe would refuse to heal if it were cut outside an operating room.

This incident is concluded with: "In the days of the good old country doctor, such a job would have been done in the office for fifty cents or a dollar." We doubt the 50 cents or a dollar part of it: but we can testify that today the vast majority of doctors in North Carolina would scorn to have such a patient go into a hospital, unless, perchance, he happened to be diabetic. Any number of cases of fracture and of fundament surgery are taken care of in the offices hereabouts. We must regard the case cited as very exceptional.

Dr. Roberts' article is substantially what this journal has been saying for a dozen years, expressed in his own refreshing way. His statement of what our "system" is is particularly apt, and well calculated to discomfit our assailants. Let those with ambitions to become philanthropists content themselves with less than the many millions requisite for the gratification of those ambitions, and get their heads together to work out plans for paying better wages and better prices for products of farm and factory, and the need for the money and the meddling of philanthropists will disappear.

Dr. Roberts produces evidence to show that there is neither need nor demand for change in the method of making doctors' services available in this country, and that such services in our country are of better quality and better distributed than in any country having a radically different plan. He knows, and he has the courage to say, that our people have far more confidence in their doctors than in any of the groups, or all of them combined, which furnish the traducers of doctors; and of their threats he aint a darned bit afeared.

Slanders on Surgeons

Most physicians have at times taken good-natured digs at our friends, the surgeons. One of our State's distinguished surgeons refers humorously to those who "will operate on anybody who will lie still long enough." This is all in good humor and exaggeration, and not to be taken seriously by anyone in his senses.

Over the past decade there has been carried out a systematic campaign of propaganda to discredit the whole of the medical profession. Now these propagandists say the private practice of medicine is in ill repute. The facts are: 1) The general repute of the medical profession is good; 2) for whatever slight ill repute attaches to the medical profession these propagandists are largely responsible, for they have brought about this condition by making false statements about the kind of service doctors are rendering their patients.

One would need but little endowment as a prophet to be able to foretell that his neighbor's dog would not live out a dog's normal expectancy, when the prophecy was being helped out by the prophet pitching pieces of beef containing gradually increasing doses of arsenic over into his neighbor's back yard. However, this particular "dog" has shown remarkable vitality; or perhaps the fact that he has retained his health and vigor is that both the poisoning and its source have been recognized and efficient antidotes administered regularly.

Apparently a change of tactics has been decided on, and Medicine is to be attacked piecemeal, starting on the surgeons; and just as was the case when mining, sapping and assault all along the front was the order, certain reputable members of

the profession have been beguiled into lending their strength to the bringing about of "reforms."

These organizations and individuals, who, by their own tale, are actuated by holy zeal in the cause of the downtrodden in their attacks on the doctors who are doing the private practice of medicine, are deriving aid and comfort from the writings of many doctors, who, presumably, have no intent of supplying water to turn the wheel of the propagandists.

A reprint[1], which was recently received by this journal bears the title, "Safeguarding the Patient against Unnecessary Surgery." This title is, in itself, an accusation that unnecessary surgery is done often enough and by a large enough number of surgeons to constitute a real problem. Apparently, the article assumes that anything short of omniscience in surgeons is their own fault; and a grave, if not a criminal, fault, a venial if not a mortal sin. Says the author: "Skillfully performed surgery when not indicated is stupidity, gross misconduct, or both. Poorly performed surgery when not indicated is not only stupidity or gross misconduct or both, but it borders on assault with a dangerous weapon, and may be murder." No account is taken of the fact, known to the veriest neophyte in medicine, that indications for a great deal of surgery are not absolute, but relative; that in a large minority of cases two surgeons of the greatest ability, of the highest standing and of immaculate honesty may disagree as to whether or not a surgical operation is indicated.

The author says that the number of surgical operations is increasing faster than the population; which is certainly to be expected unless surgeons are failing to do their duty, for surgery is constantly broadening its field of usefulness and every year finds a larger proportion of the population made up of old folks needing surgery. He complains that residents and internes perform surgical operations on their own diagnosis and without supervision. Why does he not lodge complaints with the hospital Boards? That there has been too much enthusiasm for cesarean sections and for operating on a diagnosis of chronic appendicitis has been realized by surgeons generally for a number of years; and the number of such operations have been greatly reduced.

Unethical practices and the lure of fees are given first place among the causes of unnecessary surgery, and it is urged that Regional Boards be set up to pass on all cases in which surgical operation has been advised, such Boards to be appointed by some medical society or by city or county governments.

This journal does not believe that any great amount of unindicated surgery is being done in this country, and it believes that most of the little that is being done is done on honest and reasonably capable, but fallible, judgment.

The remedy proposed is an absurdity. Where could be found able, respectable doctors, doctors who have and deserve the confidence of doctors and laymen alike, who would serve on a Board which owed its existence to the assumption that a large element in the profession is knavish?

If the author of the article under discussion has evidence to support his contentions the thing for him to do is to present concrete evidence to Grand Juries, naming names and stating specific cases.

It is much to be deplored that at a time when Medicine is being assailed and insulted by open enemies and false friends, an attempt should be made by one holding the degree of Doctor of Medicine to destroy the confidence which the people have in surgeons in general and which surgeons in general richly deserve.

Psychotherapy Without Quackery

Many have been worried over many years by our inability in some cases to see the line of separation between these two. An article by W. R. Houston of a year ago[1] helps toward a solution of the problem. He writes of a internist who gave up medicine because he could not bring himself to manage the neurotics by "that sort of semiquackery that some highly respectable members of our fraternity are able to get away with so successfully."

Houston tells us that as the patient faces the doctor, he believes in things about himself that the doctor does not believe; that the patient's thalamus is stronger than his cortex; that hope for cure rests on making such environmental changes as will alter the emotional status of the patient; and that the environmental factor of most moment is likely to be the doctor himself. We are told that a strong enough faith, even in his placebos, may be enough; but that, as knowledge advances, faith in placebos declines.

Now, how does he extricate himself from this difficult situation? By saying the physician must be a father filled with consciousness that he shares all the frailties of the patient, a friend that knows the art of showing himself friendly. The kind of faith that is recommended, that will avail the doctor, must be grounded in his own psychobiologic conceptions." It is agreed that a system of belief is implanted best in the young—which many

1. From *Hospitals*. The Journal of the Am. Hosp. Assn., Oct., Nov. & Dec., 1938, article by J. J. Golub, M.D., New York.

1. *Annals of Internal Medicine*, Feb., 1938

would regard as a damaging admission even though a statement of fact. It naturally follows that this article recommends that psychobiology be taught in the premedical years.

There is discernible in all this a gleam of hope of finding a way to draw this line. Will not some of our readers who "have a way" with neurotics elaborate the point?

In Appreciation of Dr. Feder's Contribution

This issue carries a paper by Dr. J. M. Feder on the typing of pneumococci which has exceptional value. The author emphasizes the need for rapidity and accuracy in such work, and then he describes a way that he has worked out for meeting this need. Those who have had experience of this method say it is a valuable addition to our diagnostic armamentarium, and, as the disease being diagnosed is so frequently fatal, this means that the method will prove a great saver of life.

We of this section of the country have been for a long time, chronically, bears on our own market. At last we have got over the habit of refusing to eat cotton-seed oil until it had been sent to Italy and labeled olive oil. The Pure Food Act hastened recognition on our part of the palatability and the nourishing qualities of our own oil. Nothing more than a dropping of the belief that all wise men come from the East is needed for us to recognize and acclaim advances made by our own.

Meeting South Carolina Medical Association

The doctors of our sister State to the South will hold their annual meeting at Spartanburg, April 12th and 13th. President Jas. R. DesPortes extends, through this journal, a cordial invitation to all good North Carolina doctors. He says "A welcome awaits all of you."

Those of us who live close enough to Dr. DesPortes' State to get to medical meetings across the border frequently, knowing the kind of meeting to expect, will make a special effort to accept the proffered hospitality; those who live farther away will find the longer trip well worth their while.

Worminess

Up to 30 or 40 years ago "worms" was common diagnosis, and a large proportion of these diagnoses were established by the expulsion of the animals following the administration of appropriate treatment. Then attention was concentrated on hookworm disease. After a period of hookworm hunting and slaying interest in worms subsided. A half-dozen years ago Dr. Paul Whitaker, of Kinston, called attention in this journal to the fact that worminess was still common in North Carolina.

There is every reason to believe that this condition still exists and is being overlooked more often than it is recognized. By bearing possibility or probability in mind we will be enabled to render better service to many of our patients and to make some cures which will be called brilliant by patients who have sought cure of many physicians, and in vain.

Before we conclude that the small decline in automobile wreck fatilities in 1938 means that we are doing something effectual, that we are showing more sense, it will be well to consider what the *Statistical Bulletin* of the Metropolitan Life nsurance Company says in this paragraph:

"Business conditions have a material effect on the general accident toll, and there was considerable decline in business activity in 1938."

While Operating, the Surgeon is Legal Agent of Patient

(Editorial in *Ohio State Med. J.*, Feb)

While treating a patient under anesthetic he becomes the legal representative of the patient and his judgment must be respected (Supreme Court of New Jersey). Decision was handed down in a suit for $50,000 (*Hanig vs. Orten*) instituted by a father against a physician for failure to continue a throat operation on his daughter. The physician, in defense, stated that during the operation he discovered pneumonia and abandoned the operation in the interest of the child. The child continued under the physician's care for some time but subsequently was removed from his care, although he had indicated a willingness to undertake another operation.

Justice Thomas W. Trenchard, who wrote the opinion sustaining the lower courts in dismissing the suit on the ground that the physician had acted properly, said: "Where, as here, the duly authorized representative of an injured patient had selected a surgeon to perform an operation under an anesthesia, and has appointed no other person to represent her during the period of unconsciousness, the law by implication constitutes the surgeon the representative of his patient and will cast upon him the responsibility of so acting in her interests that she shall receive the full benefit of his professional judgment and skill to which she is entitled; and this implication, which protects the surgeon while acting within its scope, places no duty upon him to perform an operation that involves risks or results of a kind not contemplated."

In Galbladder Disease.—1) Eat soups, green vegetables, citrus fruits, cereals, bread, butter, milk and lean meats. 2) Do not eat bananas, raw apples, cucumbers, radishes, peppers, spices, salad dressings and gravies.—*Saunders.*

Blood tests of 80,000 undergraduates in more than 500 American colleges and universities indicate that only 2 out of every 1,000 students examined are infected with syphilis.

Tap Water makes as good an enema as any, better than most.

NEWS

Buncombe County Medical Society

Meeting at 5 p. m. Monday, February 20th.

Turned over to Dr. Craddock who introduced the discussion on Pneumonia: — Etiology and Pathology, Dr. Curtis Crump; Diagnosis, Dr. A. B. Craddock; Typing, Mr. C. C. Damaree; Pneumonia in Infants and Children, Dr. J. L. Ward; Therapy, Dr. S. L. Crow. Discussion by Kutscher, Cliff, White, Elias and Ringer. The society then retired to the banquet hall to enjoy a splendid repast as guests of Appalachian Hall.

The meeting was reopened at 8 o'clock.

Several announcements were made by the secretary.

President Griffin then announced that the next meeting will be held as guests of the U. S. Veterans Facilities at Oteen—a dinner meeting at 7.

Dr. Murphy then presented the guest speaker Dr. J. P. Rousseau, of Winston-Salem, who spoke in a convincing and delightful manner on X-ray Therapy in Pneumonia. Dr. Rousseau's paper will be abstracted in the April issue of the bulletin. Discussion was participated in by Drs. Murphy, MacRae, Kutscher, C. H. Coxe and Kirk, closed by the essayist.

65 members present, 13 visitors.

Meeting convened at 8 p. m., March 6th, at U. S. Veteran's Facility, Oteen, following dinner as guests of the Commanding Officer and his staff. Members present 66; many guests.

President Griffin, announced that a bill was to be presented before the legislature providing for the granting of licenses to naturopaths. Dr. Herbert moved that the B.C.M.S. go on record as being opposed to the licensing of any person in N. C. to practice the healing art unless he be a qualified orthodox physician. The secretary was instructed to inform Dr. W. E. Brackett, of Hendersonville, that we should appreciate his officially representing us in opposition to this proposed law at Raleigh. The President Griffin, then announced that he had been inmotion was seconded by Dr. B. O. Edwards, and passed. formed by a local druggist of proposed State legislation which would permit experience in a drug store being sufficient to acquire a license as a pharmacist without examination. Dr. Curtis Crump moved that the matter be referred to the committee on P. H. & L. with power to act; seconded and passed.

Dr. Alfred Blumberg, was unanimously elected into membership in the Society.

The meeting was then turned over to Colonel I. R. Wagner, Commanding Officer of the U. S. Veterans Facility, who welcomed us and introduced the speakers from his staff. (1) Dr. C. W. Hoffman presented case histories of four tuberculous patients with pneumonia. (2) Drs. Carey Harrington and N. Sodofsky, the treatment of syphilis in the tuberculous. (3) Dr. R. C. Shawhan, silicosis and asbestosis.

—*G. W. KUTSCHER, JR., Secretary.*

The Eastern Carolina Medical, Dental and Pharmaceutical Society held a meeting at Dunn, N. C., on Feb. 9th Dr. F. H. Avant, of Rocky Mount, presided, and the principal address was delivered by Dr. L. T. Delaney, of Raleigh, president-elect of the Old North State Medical Society.

At the recent annual meeting of the Burke County Medical Society Dr. John W. Ervin, Morganton, was elected president; Dr. Yates S. Palmer, Valdese, vice-president; Dr. E. W. Phifer, Morganton, censor; Dr. Edith Goodwin-Barbour, Morganton, secretary-treasurer.

New Officers Neuropsychiatric Society

Dr. Hugh C. Henry, Director of State Hospitals, has been elected president of the Neuropsychiatric Society of Virginia, succeeding Dr. Frank H. Redwood of Norfolk.

Other officers chosen at the meeting held at the Western State Hospital, Staunton, were Dr. Thomas N. Spessard, Norfolk, vice-president, and Dr. Edward H. Williams, Richmond, secretary-treasurer.

Annual "Radium Number" Mississippi Valley Medical Journal

The March issue is the Twelfth Annual Radium Number of the *Mississippi Valley Medical Journal* (Incorporating the *Radiologic Review*), published at Quincy, Illinois. This contains ten original articles—

Pohle, of the University of Wisconsin, on Angiofibroma, reports an excellent result with interstitial radium; Jorstad, of St. Louis, shows the effectiveness of Interstitial Radiation in certain locations; Levin, of New York, on effective radium therapy in Prostatic and Bladder Cancer; Swanberg, of Quincy, on Radiation for Best Results in Uterine Cervical Cancer, based on 3759 treated cases. There is an editorial on The Radium Rental Controversy.

AMERICAN BOARD OF INTERNAL MEDICINE, Inc.

Written examinations for certification by the *American Board of Internal Medicine* will be held in various sections of the United States on the 3d Monday in October and the 3d Monday in February.

Formal application must be received by the Secretary before August 20th, 1939, for the October 16th 1939, examination, and on or before January 1st for the February 19th, 1940, examination.

Application forms may be obtained from *Dr. William S. Middleton,* Sec., 1301 University Avenue, *Madison, Wis.*

POST GRADUATE CLINIC ON SYPHILIS

Sponsored by N. C. State Health Dept. and Duke University to be held at Duke University, March 24 & 25, 1939

Speakers include Dr. Thomas Parran, Surgeon General U. S. Pub. Health Service; Dr. John H. Stokes, Univ. of Pa.; Dr. Joe Earle Moore, Johns Hopkins; Dr. H. N. Cole, Western Reserve; Dr. Paul O'Leary, Mayo Clinic; Dr. P. C. Jeans, Univ. of Iowa; Dr. Norman R. Ingraham, Univ. of Pa.; Dr. Carl V. Reynolds, State Health Officer; and Dr. Wm. deB. MacNider, Univ. of N. C.

You cannot afford to miss this Clinic. Be sure to reserve this date on your calendar now.

Dr. Halstead S. Hedges, has resigned after more than 40 years as a member of the University of Virginia medical faculty. President John Lloyd Newcomb has announced Dr. Hedges' resignation as Professor of Diseases of the Eye. Dr. Hedges' said he submitted the resignation in view of the fact he had reached the university's retirement age of 70 years. The Rector and Visitors in accepting the resignation adopted a resolution expressing its gratitude to Dr. Hedges for his fine service to the medical department and sought that he continue his clinical work in the University Hospital.

Dr. Thomas Flatford Gill announces the association of Dr. James Thomas Gill in the general practice of medicine, 2924 Chamberlayne Avenue, Richmond, Va.

Dr. Beam Named to Try Out New Drug

(From *The Rebesonian*, Feb. 20th)

Dr. R. S. Beam, local eye, ear, nose and throat specialst. has been designated to experiment with the new drug, Dagenan or Sulfapyridine, for the treatment of pneumococcic infections.

The Food and Drugs administration has limited its use to a few outstanding physicians with adequate facilities and competent in experimental work until its value can be established and its dosage standardized

Dr. Beam stated that the drug was now being used, under his supervision, on 6 patients in Lumberton at the Thompson Memorial Hospital.

When asked his opinion of the drug, Dr. Beam stated: From my limited experience with it, I would not be willing to give an opinion, but from the report of other investigators, men whose thoroughness and judgment I have the highest respect for, I will be greatly disappointed if it does not prove of value in my own hands.

EDITOR'S NOTE.—Merck & Co. announce that the drug is now available generally.

Dr. Ballard L. Norwood, native of Granville County, is health officer of Granville, succeeding Dr. Joe A. Morris, resigned. Dr. Morris will continue the work until July 1, during which time Dr. Norwood will receive training at the University of North Carolina in county health work. Dr. Norwood is a graduate of Wake Forest College and the Medical College of Virginia, and at present is physician in the C.C.C. camp at Greenwood, S. C. He served a short time as interne at Rex Hospital,Raleigh.

The magazine, *Time*, named Dr. Marion A. Blankenhorn and Dr. Tom D. Spies of the University of Cincinnati College of Medicine, and Dr. William Clark Cooper, Waterloo, Iowa, a former research assistant there, as the three men of the year 1938 most distinguished in science, in recognition of their discovery of nicotinic acid as a cure of pellagra.

Dr. LeRoy Maeder, of Philadelphia, gave a series of talks to the classes in social welfare work in the Extension Division of the College of William and Mary in Richmond in February and March. In addition to his private practice in Philadelphia Dr. Maeder is psychiatric consultant to The Family Society in Philadelphia, and he has long been active in The Family Welfare Association of America.

Dr. M. Pierce Rucker, Richmond, is the new president-elect of the South Atlantic Association of Obstetrics and Gynecologists, the annual convention of the association held at Charleston, S. C. recently. Dr. Robert Siebels, chosen at Columbia, is president and Dr. R. A. Ross of Duke University secretary-treasurer.

The Surry County (N. C.) Board of Health, has elected Dr. R. B. Franklin to the position of Surry County Health Officer to succeed Dr. R. J. Sykes, who recently tendered his resignation to accept similar work in Halifax County, his former home.

Dr. T. Grier Miller, of Philadelphia,, during his recent speaking engagements in North Carolina, spent a few days with relatives at his old home in Statesville.

Dr. Baxter R. Hunter, (Lieutenant Colonel U. S. Army, Retired), announces the opening of offices in the Professional Building, Charlotte. Practice limited to diseases of the digestive system and differential diagnosis.

Dr. Priscilla White, of Boston, gave a lecture at the Richmond Academy of Medicine, on March 7th, on Some of the Newer Phases of Diabetes. She spoke under the auspices of the local chapter of Alpha Epsilon Iota national fraternity of medical women.

Dr. Wright Clarkson, of Petersburg, led the discussion at the meeting in Richmond on March 9th, of the Virginia Cancer Foundation, in advocacy of a uniform charge for hospitalization of indigent cancer patients.

Dr. Hugh C. Henry, Director of State Hospitals of Virginia, spoke by invitation to the Sunday School of the First Baptist Church, Richmond, March 5th, on the importance of mental hygiene.

Dr. J. T. J. Battle, and Dr. Wesley Taylor, of Greensboro, were recently elected president and vice-president respectively of the Piedmont Bird Club.

Dr. R. Finley Gayle, Jr., addressed the annual meeting of the Richmond District, Parent-Teacher Association, at the Goochland High School, on March 16th.

Dr. Thomas W. Ross, Charlotte, announces the removal of his offices *from* 512 *to* 427 Professional Building.

MARRIED

Dr. Jesse M. Shackelford and Miss Bertha Faire Bowles, both of Martinsville, Va., were married February 9th.

DEATHS

Dr. J. C. Flippin, 61, Dean of the University of Virginia Medical School, died February 16th, of heart trouble. A sufferer from heart desease for several years, Dr. Flippin had continued to carry on his work. He was stricken the night of the 15th as he started to the University Hospital to attend a clinical conference, and died at 3:30 a. m.

Dr. Vernon C. Hall, 58, Richland, Va., was killed in an automobile accident February 15th. Burial was in Arlington National Cemetery. With the National Geographic Society in London at the outbreak of the World War, he enlisted in the air force and served for three years before he was wounded. After receiving an honorable discharge, he returned to the United States and on October 24th, 1917, enlisted in the United States Army as sergeant, first class, in the medical department. His service in the American Army totaled 29 months. Dr. William R. Williams, chief of the Richlands Hospital said Dr. Hall told him in relating his war experiences that he had shot down 27 German planes.

Dr. Virgil E. Stiff, 62, a practicing physician in Middlesex County, Virginia, for 30 years died February 11th, at Stuart Circle Hospital, Richmond, following complications resulting from a recent mastoid operation.

Dr. Fred M. Parker, 63, physician to Caledonia State Prison for many years, died February 13th, following a four-day illness from pneumonia and complications, at Park View Hospital in Rocky Mount. The body was taken to Duke University for cremation.

Dr. Garland Lightfoot Morriss, 60, died at his home at Blackstone, Va., February 24th, after a long illness.

Dr. James Thomas Justice, 65, Kernersville, N. C., died at his home February 15th, after a long illness.

Our Medical Schools

University of Virginia

The Nemours Foundation of Wilmington, Delaware, has awarded a Fellowship to Dr. Julian R. Beckwith, Senior Resident in Medicine, for research in the field of pressor substances in the School of Biochemistry under the direction of Professor Alfred Chanutin.

At the meeting of the University of Virginia Medical Society on February 27th, Dr. Porter Vinson of Richmond spoke on the subject of Gastroscopy.

On March 3rd, Dr. H. B. Mulholland delivered the second lecture in a post-graduate course in Internal Medicine in Alexandria, under the auspices of the Division of Extension of the University of Virginia. He spoke on Diseases of the Thyroid, Suprarenal and Parathyroid Glands.

On March 3rd and 4th, Dr. Fletcher Woodward spoke before the Georgia State Eye, Ear, Nose and Throat Society in Atlanta, on the subjects Treatment of Acute Ear Infections and Treatment of Acute Sinusitis in Children.

Lieutenant Colonel E. B. Maynard, of the Reserve Officers Training Corps, Medical College of Virginia, addressed the students of the Fourth Year Class on February 15th.

On March 10th, Dr. Oscar Swineford, Jr., gave the second lecture in the post-graduate course in Internal Medicine in Alexandria. He spoke on the subject of Rheumatism.

Dr. Clarence Little, Director of the Jackson Memorial Laboratory at Bar Harbor, Maine, addressed the University of Virginia Chapter of Sigma Xi on March 7th. His subject was Genetics of Cancer.

Medical College of Virginia

The annual Stuart McGuire Lectures will be held April 27-28. Dr. Wilder Penfield, head of the Montreal Neurological Institute will be the McGuire lecturer this year. As usual the spring postgraduate clinics will be held in conjunction with the Stuart McGuire lectures. The program will be announced later.

Dr. Walter E. Vest, a graduate of the school of medicine, 1909, will be awarded the honorary degree of Doctor of Science at Commencement, June 6th, 1939. Doctor Vest, a native Virginian, is well known throughout Virginia and West Virginia. At present he is internist at the Chesapeake and Ohio Railway Hospital, Huntington, West Virginia. Doctor Vest served his internship at Memorial Hospital and practiced in Virginia until 1916.

Dr. William T. Sanger, President, attended the annual meeting of the Council on Medical Educaton and Hospitals of the American Medical Association in Chicago, February 13th and 14th.

Dr. Lewis E. Jarrett, Superintendent of the Hospital Division, and Mr. Eldon Roberts, Jr., Associate in Pharmacy, recently visited Western Reserve University.

At a recent meeting of the Board of Visitors it was voted that the new dormitory for students and internes be designated Hunton Hall in honor of the late Eppa Hunton, Jr., Esq., who was a member of the Board and its executive committee for many years. Mr. Hunton gave generously of his time and money to the upbuilding of the college. At the same meeting it was voted that the dormitory for Negro nurses should be designated Saint Philip Hall.

Mr. George H. Murrill, a graduate in Fine Arts, Yale University, has been appointed artist in residence under a grant from the Carnegie Corporation to execute a series of murals, and at the same time give an informal opportunity for students to see creative work in the process of execution and for discusing it with them as it progresses.

Interne appointments for next year have been completed by Dr. Lewis E. Jarrett, director of the hospital division, the list including twelve rotating internships. Five of these are on an exchange basis, whereby five members of the senior class will be sent to the respective institutions in exchange for the five sent here. Two exchanges are made with the University of Wisconsin, one with the University of Texas, one with the University of Oklahoma and one with the University of Louisville.

Graduate internes include graduates of Chicago, Yale, Wisconsin, Virginia, Texas, Cincinnati, Vanderbilt, Jefferson, Pennsylvania, and Marquette.

Nitric Acid in Asthma.—Since the spring of 1847 I have prescribed nitric acid in severe cases of asthma with the most satisfactory results.—T. S. Hopkins, M.D., Waynesville, Ga., in *Charleston M. J.*, 1850.

Angina Pectoris.—In addition to the remedies of the books, special attention should be given to the inhalation of oxygen and to the use of electricity.
Charleston Medical Journal, 1850.

Coffee for Whopping Cough.—In *Union Medicale*, 1849, Dr. Jules Guyot a cup of coffee hot and well sugared, 4 times or oftener daily will cure in 2 to 4 days.

Recurrent herpes is apt to go away to stay after a vaccination against smallpox.

ELIXIR

DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing Pharmacists
Established in 1887

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

BOOKS

THE MECHANISM OF THOUGHT, IMAGERY, AND HALLUCINATION, by JOSHUA ROSETT, Professor of Neurology in Columbia University; Scientific Director, Brain Research Foundation, Inc., New York. *Columbia University Press*, Morningside Heights, New York City. 1939. $3.00.

The first chapter is devoted to an elaboration of the law of evolution and dissolution governing the order of appearance and disappearance of functions, the next to a discussion of the emotional state in the course of which we are told that the cerebral cortex being a storehouse of memories for future use, its function is largely suspended in the course of the emotions. Emotions and the conscious state and how we feel and give expression to emotions are gone into with great particularity.

As to the will, we are told that few subjects have been more abused in their discussion. There is much about volition, motive, the relation of will to cerebral cortex. It is admitted that the manner in which experience is recorded in the nervous system is unknown. The memory of a situation is that of a number of sensations and feelings organized in certain ways. Generally speaking, all memories reside in every part of the association system. Hand in hand with the progress of evolution of the nervous system is the evolution of representation in symbolism.

Among the striking statements are these:

Thought, imagery ad hallucination are, in that order, increasingly vivid and inaccurate subjective reproductions of objective experiences.

The reaction to sudden unappraised stimuli, which consists in being startled is a complete miniature of the epileptic seizure.

A certain thought occurs at a certain moment because it constitutes the mental index of the particular bodily need at that moment.

Each state of attention is the result of a wave of disability which sweeps along the nerve pathway in the normal direction of nerve conduction.

The large amount of work done by so many in the effort to ascertain the cause of normal sleep has been productive of scanty results.

The popular idea that an apparently long dream may transpire in a few seconds has a basis in fact.

An informative and thought-provoking book dealing with matters which concern us all in a way that we can understand if we study it carefully.

THE 1938 YEAR BOOK OF NEUROLOGY AND ENDOCRINOLOGY.

NEUROLOGY, edited by HANS H. REESE, M.D., Professor of Neurology and Psychiatry, University of Wisconsin Medical School.

PSYCHIATRY, edited by HARRY A. PASKIND, M.D., Associate Professor of Nervous and Mental Diseases, Northwestern University School of Medicine; Attending Neurologist, Evanston Hospital.

ENDOCRINOLOGY, edited by ELMER L. SERVINGHAUS, M.D., Professor of Medicine, University of Wisconsin Medical School. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago. $3.00 postpaid.

The authors see a need for closer relations between clinic and laboratory. Extremely encouraging results are reported from sulfanilamide treatment of meningitis due to strepto-, miningo-, or pneumococcus. Note is made of typical migraine in 8 children below the age of 14, that visual halluccinations, often terrifying, were present in 7 of these cases, that acute abdominal pain sometimes in one quadrant and as a substitute for headache has suggested a surgical condition. Endocrinology takes up half the book, a testimonial to the advances being made in this field.

THE COMPLETE GUIDE TO BUST CULTURE, by A. F. NIEMOELLER, A.B., M.A., B.S., Author of Superfluous Hair and Its Removal, etc.; with a foreword by EDWARD PODOLSKY, M.D. *Harvest House*, New York, 1939. $3.50.

To the assumption that a people's appreciation of beauty is a true measure of its culture, that the beauty of woman's figure is a large part of all beauty and that beauty of the beasts is a large part of the beauty of woman's figure, there can be no dissent. The chapters on physiology and anatomy and development lay the groundwork for what is to be said on the best methods of insuring the most of health and beauty in these parts. The influence of exercise, diet, posture, diathermy, massage, hydrotherapy, pregnancy and lactation are discussed; the usefulness, or uselessness or harmfulness of creams and lotions, of brassiers, of mechanical devices, of plastic surgery. There are chapters on the small bust, the large bust, the sagging bust, the nipples, lumps in the breast, deformed breasts, plastic surgery.

All these subjects are dealt with in a wholesome, sensible manner. Its warnings against paying out considerable sums of money on merchandise that can do no good are well worth the price of the book. It is a dignified, conservative treatment of a subject of much concern to a large element of our population.

ANEMIA IN PRACTICE: By WILLIAM P. MURPHY, A.B., M.D., Associate in Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Consultant Hematologist, Melrose Hospital, Melrose, Mass. 344 pages with 41 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1939. Cloth, $5.00 net.

The author has noted that much of the enormous output on anemia is misleading, at least not as clear in its teaching as might be desired, and has set himself the task of bringing order out of the

confusion and presenting the result without surplusage of words. This task has been completed, and the result is well worthy of the study of doctors of every variety.

SURGICAL ANATOMY: By C. Latimer Callander, A.B., M.D., F.A.C.S., Associate Clinical Professor of Surgery and Topographic Anatomy, University of California Medical School; Member of Founders' Group of the American Board of Surgery; Member of American Association of Traumatic Surgery; Associate Visiting Surgeon to the San Francisco Hospital. With a Foreword by Dean Lewis, M.D., Sc.D., LL.D., F.A.C.S. Second Edition, Entirely Reset. 858 pages with 819 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1939. Cloth, $10.00 net.

The plan of the book is eminently practical. Anatomical features are described and their bearings on surgical technique are pointed out right there.

The reader is reminded that scalp wounds bleed because of the abundant blood supply, heal well because of the same circumstance; that operative intervention in skull injury is prone to produce serious hemorrhage because of the difficulty of removing bone frome dura; that a "black eye" may mean bleeding into the subepicranial space from a blow on the skull; that the nasal mucous membrane, although it has abundant blood supply, is slow to heal because it has no areolar tissue between it and the bone and cartilage.

The steps of a proper removal of the tonsils are described, with reasons for each. Special anatomical features to be borne in mind in thyroid and chest operations are instructively presented. Choice of site and direction of abdominal incisions is made on freest access with least sacrifice of vessels and nerves and probable strength of wound repair. The principles of gastrointestinal, liver, spleen and pancreas operations are elaborated. The sections on the pelvis, the perineum and genitalia, the spinal column and cord, and on the extremities are all given meticulous care.

Advances have been given special attention. The illustrations are profuse and excellent. Familiarity with the contents will increase the usefulness and diminish the hazards of surgical procedures.

SURGICAL TREATMENT OF HAND AND FOREARM INFECTIONS, by A. C. J. Brickel, A.B., M.D., Departments of Anatomy and Surgery, Western Reserve University, with 166 text illustrations and 35 plates, including 10 in color. *The C. V. Mosby Company*, St. Louis. 1939. $7.50.

Says Western Reserve's Anatomy Professor Todd:[1] "It has now been many years since I asked Dr. Brickel to undertake a special study of the hand with respect to its surgical treatment .... In 1934 the progress .... made convinced me of the necessity for permanent record of the newer relevant facts which he was then unearthing in profusion. With the assistance of Miss Helen Williams, the beauty of whose anatomical drawings is equalled by their scientific accuracy, Dr. Brickel has achieved a finished presentation of this problem."

First comes a series of dissections, each pictured in black-and-white *and* in color, portraying the surgical anatomy of the different structures of the member, supplemented in each case by clinical notes. Chapter II gives the technique of radiopaque injections of the hand spaces, with general comments and conclusions. Then come a consideration of principles of hand and forearm infections, regional surgery—from infections of the finger tip to specific grave infections, human bites, influence of diabetes and peripheral vascular disease, and medicolegal aspects. All along summaries of treatment are given.

One must agree that Professor Todd has not overstated the case for Dr. Brickel's book.

1. Since this review was written the reviewer has learned of Dr. Todd's death on Dec. 28th of last year.

A TEXTBOOK OF BACTERIOLOGY, by Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health at the Indiana University School of Medicine. Second edition, revised. *W. B. Saunders Company*, Philadelphia and London. 1938. $5.00.

The book opens with a brief history of bacteriology and goes on to a discussion of the bacteriology of everyday life, its place in medical progress, means of studying bacteria, the detection of their biological activities, and means for their destruction. How bacteria cause disease and how the body resists their attacks are subjects that never fail to enlist interest and excite wonder.

The peculiar qualities of the various kinds of bacteria which are known to cause disease, the viruses, the bacteriophage, yeasts and molds, toxins and antitoxins, immunity, specific reactions, hypersensitiveness—all these subjects are dealt with concisely, yet sufficiently, and entertainingly.

Dr. Rice's writings on popular phases of nutrition and other health matters have given the general public an opportunity to appreciate his sound sense, his thorough familiarity with his subject, and his attractive way of setting forth his thoughts.

His Textbook of Bacteriology is highly recommended to practitioners and medical students as the best and clearest exposition of the subject to be had.

Sarcoma of the Stomach.—In 1930 Balfour and McCann, of the Mayo Clinic, reported 54 cases. The average age of the patients was 43 years.

In certain cases it will pay to have the patients take only water for two days; if, then, the symptoms present it will be obvious that they are not due to food.—*Alvarez.*

CHUCKLES

"What do you do in a case of amnesia, doctor?"

"I collect my fee in advance."

"So you deceived your husband," said the judge gravely.

"On the contrary he deceived me. He said he was was performed under sacral anesthesia and in the prone position cut of town and he didn't."

Teacher—Is the world round or square, Mary?

Mary—Neither. It's crooked.

He—"When I left my last boarding place, the landlady wept."

Landlady—"Well, I won't need to. I'll collect from you in advance."

THE great physiologist Ludwig was showing a frog from which he had removed the brain, when the frog suddenly made a vigorous leap almost into the face of one of the class. The audience shrieked with laughter, whereupon the wise man remarked: "You see, gentlemen how little brain is needed to set people laughing."

"You must be on a war diet?"

"Because all of your food goes to the front."

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

Back Again!

You can travel anywhere..any day... on the SOUTHERN in coaches at..

1½¢ Per Mile for each mile traveled

Round Trip Tickets

2½¢ PER MILE ➡ FOR EACH MILE TRAVELED

Good in Sleeping and Parlor Cars on payment of proper charges for space occupied.

One Way Tickets

3¢ PER MILE ➡ FOR EACH MILE TRAVELED

Good in Sleeping and Parlor Cars on payment of proper charges for space occupied.

Air-Conditioned Coaches on through Trains

ENJOY THE SAFETY OF TRAIN TRAVEL

SOUTHERN RAILWAY SYSTEM

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., APRIL, 1939 No. 4

Recent Observations on Eye, Ear and Throat Practice in Europe*

JOHN A. PILCHER, JR., M.D[1]., Roanoke, Virginia

THE greater part of the month of December I spent in London observing eye, ear, nose, and throat work, so I shall confine my observations to what I saw in London hospitals.

The English plan of hospital management differs from ours, both for general and special hospitals. Their three kinds of hospitals, classified according to method of financing and patients accepted are: (1) state or municipal hospital, (2) donation hospital, and (3) nursing home or private hospital.

In the state or municipal hospitals all beds are free, and the clinics are free. They care for all kinds of cases both general and special. So far as I know there are no municipal special hospitals.

The gift or donation hospitals are hospitals which were founded by the church or by private donations, and are supported entirely by gifts. The beds and clinics as a rule are free. In the past few years many of these hospitals have got away from the entirely free idea, and now have some private and semi-private beds very similar to the arrangement in endowed hospitals in America. Under this class of hospitals there are both special and general hospitals. There are some which limit themselves to eye, with only a small ear, nose and throat department. The general hospitals as a rule have an eye, ear, nose and throat department in conjunction with the other departments. So far as I learned there are no hospitals limited only to ear, nose and throat work.

The nursing homes or private hospitals have only private beds and depend upon the income from these beds for their support. They are small and accept any case so long as the patient is able to pay. I know very little about this type of hospital for I did not visit any.

All hospitals which I visited were fully equipped with the most modern equipment. They had both graduate and student nurses, and an intern staff similar to that in America. It seemed to me that the interns had less authority and less opportunity to do practical work than do those in American hospitals.

In order to get an internship in the leading special hospitals, I was told that the applicant must have taken a course in the specialty and an examination which leads to a degree given by the Royal College of Surgeons. These courses and examinations are given in the teaching hospitals. As I understand it, a very similar plan is now being inaugurated by many of the eye hospitals in America, in that they require that the applicant take a special course in ophthalmology before being accepted for internship.

As in the larger cities in America, the attending physicians have certain afternoons or mornings in which they work in the out-patient clinics of the hospitals and do their operating. Assisting them are the interns and physicians who are taking special courses of lectures leading to degrees. The clinics are conducted similarly to those in America.

While in London I had the privilege of observing several times a very interesting case of brain infection following bilateral mastoid infection. This case was that of a man about 35 years of age who came into the hospital semiconscious. Both ears had been discharging for several months. X-ray examination showed bilateral involvement of the mastoids. He had a high fever with definite signs of meningeal irritation, the spinal fluid being cloudy. There were no localizing signs of brain abscess except verbal aphasia; *i.e.*, he could not call the name of the object held before him, but could tell

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

1. Since this was put into type the sad intelligence has been received that Dr. Pilcher died March 7th.

the purpose for which it was used. If he were shown a key, he could not say the word key, but he could say "to lock a door." It was doubtful which side of the brain was involved. He was left handed, so it was decided that the brain lesion must be on the right. The right mastoid was opened and the brain explored, but no brain involvement was noted. The left mastoid was then opened and pus was found beneath the dura. Within 24 hours the patient's condition was much improved. His spinal fluid gradually became clear, and the verbal aphasia was becoming less pronounced when I last saw him, about ten days after operation. This case is apparently very unusual in that there was a verbal apasia in a left-handed man with the brain lesion on the left side.

I observed several cases of diagnostic bronchoscopy and esophagoscopy as performed by two men. Both used the same methods and instruments. The interesting thing to me was that they had designed a table which made it possible to perform peroral endoscopy with the aid of only one nurse. It eliminated the human factor of holding the patient's head and shoulders, and apparently was much less disagreeable to the patient than the usual method followed in America of having an assistant hold the head and shoulders of the patient. The endoscopes used were of his own design. The esophagoscopes and the laryngoscopes were illuminated by a pair of proximal end lights. The bronchoscopes were illuminated by a distal end light aided by a proximal end light if necessary. This method of illumination gave good light well beyond the end of the instrument. The general design of the instruments was similar to the usual design in America, except that the proximal end was larger than the distal end which seemed to provide better visibility.

I also observed a number of operations on the eye, among which were detachment of the retina, squint, and cataract operations. I was much surprised to see that tenotomies were done on the internal recti for internal squints instead of the more exact recession operation as described by Jameson in this country. The retinal detachment operations were similar to our own methods; *i.e.*, the electro-coagulation method was used. The cataract operations were similar to our usual methods, except that they frequently made use of the Vienna method of splitting the capsule with the cataract knife, at the time of incision. This method more than once caused complications in that the iris was caught by the cataract knife and a small piece of the iris was removed in completing the incision. The operators that I saw frequently made a conjunctival flap but seldom used conjunctival sutures. They almost always placed one suture in the lids to make sure of their complete closure after operation. These sutures were removed at the first dressing. In comparing a large number of ophthalmologists and their methods of operating, I came to the conclusion that their methods and our methods are similar in many but not all respects.

It may interest you to know some of the preparations made by the medical profession during the recent European crisis. As far as I could learn they were apparently well organized to take care of any emergency which should arise in London during an air raid. I could see no signs of preparation in December while I was there, but their organization was outlined to me by some of the doctors. During the crisis all of the hospitals were evacuated of patients as far as possible, and some of the hospitals evacuated completely, especially those near important centers of London where bombing would probably take place. The windows of the lower floors and operating rooms were covered with sheet steel and sand bags, and wire netting was placed about the outside of the hospitals, and sand bags on the roofs. Each staff member was head of an emergency unit made up of interns, students, nurses and orderlies. In case of an emergency each knew where to be and what to do. I was told that in case of an air raid the subways would immediately be closed to the public and that the stations far under ground would become emergency first-aid stations and that the trains would be used to transport the injured to out-lying hospitals. Dugouts in the parks were constructed eo protect the people. These were much in evidence as the beautiful parks resembled innumerable large mole mounds.

Many of the doctors sent their families out of London to some place away from any densely populated center. Work went on as usual, but every one had a feeling of tenseness. One doctor told me that he was unable to keep his mind on his work properly. Neither could he relax and read at night. There was a feeling of something impending which kept everyone in a state of uneasiness and unrest. He said there was great relief when the strain was at least temporarily relaxed. However, political affairs are still in a state of unrest and one does not know what to expect in the future. They all envy us in being far away from a troubled Europe. Even though I have seen only a small part of Europe, I am thankful for having been born an American and for the exceptional privileges that we have as Americans.

725 Shenandoah Life Building

The Allergic Patient*

WILSON PENDLETON, M.D., Asheville, North Carolina

IT IS ESTIMATED that 7 to 10 per cent of our population are afflicted with one or both of the major allergies—asthma and seasonal hayfever. In addition, a much larger percentage are victims of minor allergic manifestation; and it is with the latter group that this paper is more particularly concerned.

The allergic patient is the victim of a chronic disease, which produces symptoms as the result of a combination of circumstances; namely, heredity, hypersensitivity, endocrine imbalance, nervous instability, the physical elements — temperature, humidity and wind velocity. With this conception of clinical allergy, it is necessary to see the patient as a whole—his environment, his mode of life, the tension under which he lives and works, rather than as a person who comes into the office for skin tests.

The disease, while chronic in nature, usually has periods of remissions, seasonal or non-seasonal; and demands of the patient steadfast faith and coöperation; of the physician, persistence and imagination.

Asthma, seasonal hayfever and certain, if not all, urticarias, are sufficiently specific allergic reactions, needing no further proof; but our ever-increasing knowledge and better diagnostic facilities have made it necessary that allergy be considered in the differential diagnosis of symptoms in the various parts of the body. To name some of the possibilities: repeated so-called colds in the head, perennial rhinitis and sinusitis in the upper respiratory tract, in the gastrointestinal tract so simple a thing as the canker sore to the distressing pruritus ani. Between these extremes allergic reactions may simulate peptic ulcer and appendicitis, in addition to being responsible for anorexia, pain, nausea, vomiting, gas and distress after meals, constipation, diarrhea and colitis; in urology, symptoms such as frequency, tenesmus and enuresis; on the skin, eczema and contact dermatitis; and lastly, from 35 to 50 per cent of the cases of migraine.

To ascribe to allergy such varied possibilities would appear to be the enthusiasm of a single-track mind, if they were not a matter of record by various competent observers. Three illustrative cases are presented:

CASE 1.—A poorly nourished, irritable boy five years of age, was referred by a nose-and-throat specialist on account of a perennial rhinitis. The symptoms followed an automobile accident in which the child's face was thrown against the windshield. There was no injury to the nose to account for the symptoms, and failure to respond to usual routine treatment prompted the nasal surgeon to refer the case for an allergic study. The key to the solution was the fact that the patient's brother had seasonal hayfever. The child was not completely skin tested but sufficiently so to reveal sensitivity to milk and wheat. These were eliminated from his diet; and, within a week, the nasal symptoms were entirely cleared up, the child much less irritable, and slept well; in two months he gained five pounds. This child has been under observation for three years and continues to do well.

CASE 2.—A woman, 25 years of age, with bilateral active pulmonary tuberculosis, who had considerable gastrointestinal distress, anorexia, gas, cramps, pains in various parts of the abdomen, tenderness on palpation over the abdomen—no particular localization. In view of the active pulmonary tuberculosis, tuberculous enteritis was considered the very probable cause of the gastrointestinal symptoms. Consultation with a gastroenterologist ruled out any organic trouble; various food tests were negative. Fortunately for the patient, she developed a generous crop of hives after eating chocolate ice cream. Promptly chocolate and cocoa were eliminated from her diet. Within a few days the gastrointestinal symptoms cleared up; and, what is more to the point, they returned whenever the patient ate any chocolate.

CASE 3.—A man, 30 years old, with gastrointestinal distress, pain, anorexia, nausea, gas, particularly after the noonday and evening meals. On two occasions he had an acute gastroenteritis, with nausea, vomiting, diarrhea and fever. He had consulted a gastroenterologist and nothing organic was found. There was no history of allergy, but a differential blood count showed an 8-per cent eosinophilia. He was tested out and gave a four-plus reaction to cotton seed.

It is tedious to eliminate cotton seed oil from the diet, as it gets into so many things, such as breads, pastries, salad dressings etc. As nearly as practicable, cotton seed oil was eliminated, and since that time he has had a much better appetite, afternoon and evening gastrointestinal distress relieved, has gained weight and his sense of well-being improved.

An interesting aspect of this case was the fact that the patient had always been interested in gardening and did much of the work. He had noticed that at those times when he used fertilizer he always returned to the house not feeling as well as when he went out. The cotton seed in the fertilizer was probably the cause, this time being taken in by inhalation, yet producing gastrointestinal symptoms.

When and why are we to suspect allergy as the responsible cause for the symptoms? Only after a thorough and complete physical examination fails to reveal any organic trouble and the symptoms do not respond to the usual treatment. These patients are too often suffering from a diagnosis of functional disease, which may well make a sub-

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

stantial contribution toward making them hypochondriacs. The answer to the second part of the question is quite well set forth by the rules in vogue in the Rackemann[1] Allergic Clinic in Boston:

1. A presentation of symptoms which can be explained by smooth muscle spasm in increased capillary permeability.
2. The occurrence of one or several other manifestations of allergy.
3. A positive family history.
4. The presence of positive skin tests.
5. The presence of an eosinophilia.

It is not necessary that all five conditions be present, since each one suggests the allergic possibility.

The diagnosis proceeds along the usual lines—history, physical examination with indicated laboratory procedures and the addition of skin tests. The influence of heredity is well established. The patient's life should be carefully explored for any possible connection between past illnesses and present symptoms. The history of the present illness should be a detailed account of the patient's way of life—at home, at work and at play.

Swineford[2] emphasizes that information of etiological importance had been gotten by history in 162, and by skin tests in 98, of 245 cases. In order that essentials may not be missed, time is saved and more accurate information obtained by having before you a scheme of the questions to be asked, as well as a food chart. The food chart provides an accurate and rapid method for asking about individual foods, the patient's likes and dislikes, and what if any foods he associates with his symptoms—as an example: when sea-food or eggs are eaten on certain fast days instead of meat. Vacations away from home or work or both often influence symptoms, thereby being of etiological importance. Question the patient as to the drugs taken for constipation or headache—a chronic dermatitis may be caused by the phenolphthalein which is in so many laxatives today.

It is not uncommon to find a definite association of symptoms with the menses, an example being urticaria. Such an association suggests possible therapeutic aid.

An essential part of the history is the tension under which the patient lives in his domestic, business and social life: in other words, compatibility of environment.

Even though you are confronted with what appears to be a definite case of allergy, it is necessary that a general physical examination be made. Otherwise, contributory causes of symptoms may be overlooked and prove a source of embarrassment. The allergic patient may have other things wrong, just as the tuberculous patient may have a gastro-intestinal allergy.

During the physical examination be on the lookout for evidence of endocrine imbalance, such as abnormal fat distribution, character of the skin, type and distribution of the hair. Solomonica and Kurkoh[3] concluded that the state of the endocrine system plays an important role in individual susceptibility to allergic phenomena.

As to laboratory procedures, one should do as a routine: the urine, complete blood count with differential count, sedimentation test, and if any sputum or nasal discharge is present, examine these for eosinophiles. Basal metabolism and blood chemistry studies and determination of the leucopenic index should be done when indicated.

The public, by various ways, such as medical columns in the lay press, have become convinced that skin tests are far more specific than they are. This is unfortunate. Rackemann[4] has this to say: "Skin tests are regarded like an x-ray—sometimes the observations are conclusive, frequently they are helpful, but often they are of no use and may be misleading."

Skin testing can be, and often is, a land of confusion, even to the very experienced, for you can get positive reactions with no clinical evidence and negative reactions with clinical evidence; but, in spite of its lack of precision, it is the best method so far evolved for the determination of reacting substances, and is a very necessary part of the diagnostic study of the allergic patient. The allergic individual is usually multiple sensitive, and skin testing to be informative must be thoroughly done. I do not mean to say that the patient should be tested with an endless number of substances with which he has no contacts, nor with foods that he does not eat; but be sure that he knows his contacts and is familiar with the composition of what he eats and drinks. The painstaking history is the guide to proper skin testing

Of late various commercial houses, in the interest of simplicity and economy, have made available packages of pollen for testing the patient with seasonal hayfever. Such methods are to the advantage of neither the patient nor the doctor. Too often treatment based upon such limited knowledge is not satisfactory, for the very simple reason that other sensitivities aggravating the symptoms have not been revealed and the proper treatment not initiated.

Rinkel[5], in an article on Respiratory Allergy, says: "Since diet affects the majority of seasonal hayfever patients, the diagnosis of food sensitivities is a necessity and no patient should be treated unless this has been done. There is one other

relation of diet to treatment of seasonal hayfever that should be emphasized: Diet is a frequent cause of systemic reactions during treatment. Eyerman was the first to report this. In any patient in whom the pollen dose cannot be increased, the probability of a complicating food sensitization should be investigated."

Time permits only the mention of various other diagnostic procedure; namely, the ophthalmic test, the nasal test, indirect testing, patch testing, elimination diets and the leucopenic index. The indications for, and technique of, these examinations are best gotten from any authoritative book on allergy.

This paper is not concerned with the detailed treatment of allergic conditions, but rather with certain principles of treatment. The allergic patient with symptoms is one whose threshold of tolerance is exceeded and his allergic stability thereby lost. The goal of treatment is the restoration of the patient's balance and its maintenance by a new way of life—a result quite similar to what is desired in the treatment of pulmonary tuberculosis—an arrest of the disease and a scheme of living by which the patient continues master of the disease.

Information obtained from the skin tests provides the first step in instituting treatment. The positive-reacting substances are to be disposed of in two ways: either by elimination, as with the feathers and cosmetics; or by hyposensitization, as with dust. But in view of the well-established fact that many positive reactions may be non-specific, allergic balance may be established by but little manipulation—for example, the perennial hayfever patient may be made symptom-free by dust-proofing the feather pillows and the use of non-allergic cosmetics and toilet articles. The state of the allergic patient is in a way not unlike that of the proverbial camel's back, one additional sensitivity proving to be the last straw.

In the beginning of this paper attention was called to contributing factors which may aggravate the patient's symptoms — endocrine imbalance, nervous tension, foci of infection, physical agents. These contributing influences cannot be ignored, but should be properly treated where indicated.

Turrentine, in a paper on Certain Procedures in Allergic Cases, has very well said: "Before starting the management of any allergic case, bear in mind that you are dealing with a chronic condition that perhaps will not be relieved by other measures and a condition with very elusive causative factors which may require months to detect."

Successful treatment is the end result of the attention to details; and asks of the patient faith, willingness and diligent coöperation; it demands of the physician ingenuity and sympathetic understanding.

213 Arcade Building.

Bibliography

1-4. Rackemann, Clinical Allergy, *MacMillan Co.*, 1931
2. Swinford, Observations on History Taking in Allergy, *Va. Medical Monthly*, 63:139-148, June, 1936
3. Solomonica and Kurzrok, Influence of Endocrine Glands Preparation on Allergic Reactions, *Endrocrinology*, 20:171-173, March, 1936
5. Kinkel, Respiratory Allergy, 34:329-332, *Mo. State Med. Jour.*, Sept., 1937
6. Turrentine, Certain Procedures in Allergic Cases, *Southern Med. & Surgery*, 99:495, Oct., 1937

Discussion

Editor's Note:—

Dr. F. M. Routh, Columbia and Dr. G. R. Wilkinson, Greenville, discussed this paper. If the stenographer's reports sent these members are not returned in time to appear in this issue, they will appear in our next issue.

Dr. Wilson Pendleton, closing:

In conclusion I want to say that we do not know as much about allergies as one might infer from the amount written and spoken about it. A thorough going-over of the patient is necessary. Contrary to what some others have said I believe the skin test does tell us a lot Too much treatment on too little evidence is one of the worst things in the world. Nervous tension probably is the biggest contributing factor.

I want to cite the case of a lady 25 or 30 years of age who had urticaria. She was treated from every angle. Adrenalin made her comfortable for half an hour. She was sent away for a change for patient and doctor. Nothing did any good. The urticaria had started when her husband's business had closed up and stopped when he got a job again, thus showing the effects of nerve strain and worry. In this case no tests were ever made. None of these patients should have any treatment not based on presumptive evidence that it is definitely indicated.

Side Lights on Indian Medicine of the 17th Century

(D.V.S. Reddy, in *Indian Med. Rec.*, Feb.)

A chronicle of contemporary events in Bengal, Assam and Orissa written by Mirza Nathan, a distinguished Moghul general in the subjugation in the 17th century of these areas to Moghul sovereignty, just become available to the English readers through the translation of Dr. Borah, published by the Government of Assam.

Ihtimam Kahn, Admiral of the Moghul fleet in Bengal fell seriously ill. Kabiraj, a skillful physician who possessed a knowledge of astrology looked at the stars of Ihtimam Kahn and found that the string of existence of the patient had not yet been broken. After examining the pulse he said: "The fate of this great man is in the hand of God. If you give him up for lost and then leave him to me I may try some treatment; the ultimate result is in the hand of God." Then that enlightened wise, and experienced man dissolved 3 red pills of deadly poison in a quantity of lemon and ginger water and put it in the mouth of the patient. Before the administration of the medicine he said: "If the most merciful God grants him relief, then after 4 astronomical hours, he will ask for water; if he does not ask for water, then the case is hopeless." When suddenly the Kahn asked for water in a loud voice Kabiraj and Mirza Nathan paid their

(To Page 180)

Rectal Strictures, Benign and Malignant*

Harry J. Warthen, M.D., Richmond, Virginia

THE consideration of both benign and malignant strictures of the rectum within the scope of one paper may appear to be an unusual procedure. However, the superficial similarity of these conditions and the increasing frequency with which this distinction has to be made warrant a short report on this subject.

In discussing benign rectal strictures I do not include post-traumatic or congenital strictures for the history in these cases makes the diagnosis and the proper remedy obvious. The type of benign rectal stricture encountered most frequently is the late result of an infection by the virus of lymphogranuloma venereum. Prior to the introduction of the specific intradermal test for this condition by Frei in 1925, strictures of this type were thought to be due to syphilis, gonorrhea or tuberculosis. It is now generally conceded that these conditions rarely cause rectal stricture. The term lymphogranuloma venereum has been recently introduced to designate a condition formerly confused by many names. When applied to both sexes it has been variously called lymphogranuloma inguinale, nontuberculous granulomatous lymphadenitis, hypertrophic bubo, tropical bubo, climatic bubo, strumous bubo, fourth venereal disease and sixth venereal disease.

This condition was formerly thought to be a tropical and semitropical disease, but in recent years cases have been recognized all over the world and its incidence is undoubtedly increasing. In this part of the country the disease has occurred largely in Negroes, but the white race has no immunity and we may expect to see an increasing number of victims among white patients.

Lymphogranuloma venereum is caused by an ultramicroscopic organism or virus which is transmitted during coitus. After an incubation period of one week, a small, transient, painless ulceration appears on the genitals. This is frequently overlooked in the male and very rarely noticed in the female. After several weeks the lymph nodes draining the initial lesion become edematous and multiple foci of suppuration appear. The abscesses form slowly and if incised drain for weeks or months. A large amount of fibrous tissue forms and considerable scarring results. The lymph nodes involved necessarily vary with the sex of the patient and the location of the primary lesion.

In the male the inguinal glands are affected primarily with occasional extension to the iliac and hypogastric lymph nodes. Rarely the anastomosing lymphatics between the glans and prepuce and the scrotum permit involvement of the lymphatic network about the anus.

The lymphatics of the posterior portion of the vulva and the posterior wall of the vagina drain freely into the lymphatic network about the anus and rectum. An initial lesion in this area is almost certain to involve Gerota's nodes at the anorectal junction. The lymphatics at this point surround the rectal wall. As a result the edema, secondary infection and late fibrosis with dense scarring that results from lymphogranuloma venereum cause stricture of the rectum at this level.

The increasing frequency with which this disease is encountered in colored females and the superficial similiarity of venereal stricture to carcinoma of the rectum deserve a careful comparison of the two conditions.

Age.—The majority of venereal strictures develop during the third and fourth decades; *i.e.*, during the period of greatest sexual activity. Carcinoma of the rectum appears most often in the sixth decade, less than 4 per cent of all cases occur before the age of 30.

Race.—The large majority of venereal strictures occur in Negroes, whereas carcinoma of the rectum is twice as common in the white race.

Sex.—In our series only 10 per cent of benign rectal strictures were in males, as compared with a 3-to-2 preponderance of males in carcinoma of the rectum.

History.—The average duration of symptoms on admission in our lymphogranuloma venereum cases was 5.8 years, whereas the average for carcinoma of the rectum was only eight months. In venereal strictures the first symptoms are usually those of proctitis—pain, burning and the passage of blood and pus. Edema of the rectal wall frequently causes protrusions which are often mistaken for hemorrhoids. Perirectal abscesses not infrequently develop and the appearance of rectal fistulae further complicates the already confusing picture. Many of the patients are operated upon one or more times before a digital examination discloses the underlying rectal stricture. In lymphogranuloma venereum abdominal pain, irregular fever and

* Read before the Southside Virginia Medical Society, meeting at Petersburg, Dec. 13th, 1938.

marked weakness usually occur early. A severe secondary anemia is a constant late finding. Cardiovascular-renal disease is prone to develop, and many of these patients are semi-invalids before the onset of obstructive symptoms bring them to the hospital. In carcinoma of the rectum bleeding is usually the first symptom to attract attention. This may vary from streaking of the stools to brisk hemorrhage. Change in the bowel habit with various combinations of constipation and diarrhea may precede, but usually follows, the bleeding. Rectal discomfort is a late symptom, and varies from a sense of fullness to severe pain in the rectum or referred to the sacrum or thighs. The general symptoms of cancer of the rectum are late and usually consist of loss of weight and strength. Intestinal obstruction may appear early in lesions situated in the rectosigmoid, but occurs late if at all in growths arising from the rectum proper.

Diagnosis

The digital and proctoscopic findings in venereal strictures are remarkably uniform. The upper limit of the stricture is usually 6 to 9 cm. above the anus and the stenosis extends downward for several centimeters. As a result of the lymphatic blockage in the upper rectum the distal bowel is edematous and inflamed. The fibrosis causes a fusiform narrowing of the rectal lumen and produces a characteristic friable "feel" easily recognized by the examining finger. The tissues are inelastic and forcible attempts to dilate the stricture usually cause tears. The rectum is extremely tender and oftimes a satisfactory examination can be made only under a general anesthetic. Stenosis frequently makes impossible the insertion of the proctoscope through a venereal stricture. If the area can be inspected the findings are those of a fibrous stricture and proctitis.

A carcinoma of the rectum is usually less sensitive and, except in the late stages, the examining finger can be introduced past the stricture without difficulty. The malignant stricture as a rule is firm, the margins sharply defined. An ulcerated cauliflower-like growth or a crater surrounded by rigid walls is usually found in cancer of the rectum. The proctoscopic examination in carcinoma shows a well-defined ulceration surrounded by normal mucous membrane.

A Frei test should be made in every case of suspected stricture of the rectum. This is specific for lymphogranuloma venereum. One may be led into error by a patient having both a cancer of the rectum and lymphogranuloma venereum. A biopsy should be taken in every rectal stricture, for borderline cases may be deceptive and several patients have been reported with carcinoma of the rectum superimposed on a venereal stricture.

Treatment

We have tried practically all of the current medications with a notable lack of success. During the past few years the formation of a colostomy early in the disease followed by digital dilatation has gained increasing favor. Dilatation of the stricture is hazardous for the rectal wall frequently tears, and if the rent occurs anteriorly a generalized peritonitis results. Any stricture in the female that requires the introduction of the index finger past the second joint is potentially dangerous, as the cul-de-sac of Douglas descends to this level. Peritonitis may follow dilatations in which the rectum is not perforated, it being possible to massage infection through the diseased rectal wall. For the past two years, in order to avoid this danger, we have combined a colostomy with a chemical and mechanical obliteration of the cul-de-sac.

The operation is done under spinal anesthesia through an abdominal incision with the patient in marked Trendelenberg position. After swabbing the peritoneum lining the cul-de-sac with half-strength tincture of iodine this area is obliterated by a series of purse-string sutures. A final continuous suture of chromic catgut approximates the upper margin of the posterior surface of the broad ligaments to the posterior parietal peritoneum. A double-barrelled colostomy is made by bringing the sigmoid through a left muscle-splitting incision. The loop of sigmoid is supported on a glass rod passed through the mesentery and the bowel is divided later with the cautery. This may continue as a permanent colostomy or it may be closed if the subsequent condition of the patient justifies it.

Diversion of the fecal current from the diseased bowel diminishes the infection and the proctitis disappears. The stricture softens and responds to dilatation. The danger of peritonitis is obviated and local procedures may be carried out through the rectum with safety. Cases have been reported in which the stricture recurred after closure of the colostomy. We have not closed any of these colostomies and do not know if the stricture will return; but we feel that the safety afforded by this procedure justifies its use should no further benefit be derived.

The after-care of these patients is important. Hot rectal irrigations should be given through the lower stoma of the colostomy. The strictures are much less painful after the colostomy is made and the patients return for rectal dilatations with surprising regularity.

The treatment of carcinoma of the rectum has become fairly well standardized in recent years. Despite the advances made in treatment by radiation of malignancies elsewhere, the use of radium and x-rays has been of little aid in the cure of carcinoma of the rectum. A combined abdominoperineal operation with the formation of an artificial anus in the left lower quadrant, followed by excision of the rectum and associated gland-bearing area, offers the best chance of cure. This can be done in one or two stages depending upon the extent of the growth, the condition of the patient and the skill and experience of the operator. This operation should be reserved for patients who present a reasonable chance for a cure. In certain cases in which there are distant metastases a colostomy with postoperative radiation is indicated. A palliative resection, though frequently of value in cancer elsewhere in the gastrointestinal tract, is rarely, if ever, justified in cancer arising in the rectum. Local infiltration and fixation of the rectum prior to the colostomy should not be a deterrent to operative removal if distant metastases can not be demonstrated. Many of these tumors diminish in size remarkably after a colostomy diverts the fecal current from the growth. Cancers that appear frankly inoperable when first examined frequently shrink to such an extent that excision may be easily accomplished several weeks after the colostomy.

In concluding this sketchy presentation of a subject much larger than its treatment would suggest, I would like to emphasize the importance of hospitalizing patients with rectal strictures as early as possible. While the danger of metastases makes this imperative in carcinama, the physical deterioration that follows benign strictures of the rectum make early diagnosis and treatment of this condition scarcely less urgent. In the past two years we have had several patients with venereal stricture die before their condition could be improved sufficiently to permit operative treatment and it was small comfort in these cases to reflect that their death was due to a benign and not a malignant stricture.

710-712 Medical Arts Building.

Pasteur and Lister Have Been Misrepresented

(H. W. Orr, Lincoln, Neb., in *Jl. Iowa State Med. Soc.*, Feb.)

Both Lister and Pasteur emphasized the ability of the patient to defend himself and the danger of the introduction of germs by exposure of the wound to the air while meddling with wounds in changing dressings, or by attempts at wound treatment. Lister pointed out also the danger of tissue damage and of delay in wound repair if any chemicals were applied to the surface of the wound.

Lister permitted himself to be drawn into the search for an agent which would cure infection; but in that search, which is the usual, and the mistaken, conception of listerism, he and all of his followers have failed up to the present time. Even Dr. W.W. Keen said that listerism as a method of treating wounds had failed, and that only the Carrel-Dakin method could save the situation. This, however, was only another method of using a chemical antiseptic directly on wounds. The frequent exposures and irritations of the wound surface and the neglect of immobilization in fractures and other compound wounds were so serious that for these reasons as well as because of its technical difficulties, the Carrel-Dakin method has had to be abandoned.

For all these reasons I have returned to the original Lister idea. I employ a simple aseptic technic and dressing for the purpose of protection of the wound surface and the exclusion of infection. Along with our special dressing method we employ the principles advocated by John Hunter, John Hilton and Hugh Owen Thomas for insuring protection and rest by immobilization in correct position of all injured, damaged and infected extremities.

I should like to ask you to change your method of dealing with the next patient you have in whom there is wound infection and septicemia. As inflammation, swelling, discharge, fever and the other signs of wound complications and septicemia develop, instead of continuing with frequent dressings, simply provide wide drainage for the wound, put on a non-irritating antiseptic dressing and immobilize the inflamed part in a splint or plaster cast.

Lister was fully aware of the importance of natural repair. He pointed out in his writings that much of the successful surgery done before the advent of antiseptics was due to the ability of the human body to defend itself. Even Lister's immediate followers and nearly all of those since that time have misunderstood his original conception and technic.

Recently Dr. Robert Morris has written an autobiography entitled, *Fifty Years of Surgery*. Dr. Morris was one of the earliest, most enthusiastic and most successful advocates of listerism in America, and yet he failed to appreciate the fundamental idea of listerism. Dr. Morris was doubtless one of the many who employed antiseptic dressings and irrigations with frequent dressings and disturbances of the wound under the impression that he was following the Lister antiseptic method.

In the Orr method we employ the protective technic advocated by Lister. We handle all of our wounds by means of infrequently changed sterile vaseline dressings and we go even further than most of our predecessors in employing technical methods for the immobilization of inflamed and injured parts and for their prootection in correct position. It is important to remember that in reducing a fracture, especially a compound fracture, one must replace in correct anatomic and physiologic position, not only the damaged bones, but all the structures which contribute to the return of correct function, circulation, nutrition and nerve supply. Anatomic relationship must be restored and the limb and the patient protected against irritative motion, as well as the wound supplied with drainage and protected against the introduction of infection. Such a patient has a better chance for immediate recovery, he is more comfortable and he is protected against a tendency to contraction and deformity.

Radium.—There are only 25 oz. in the world. The value of 1 grain is $2,000. *Radon* is a radioactive gas produced by radium. Radon loses half its strength in 4 days and is inert in 30 days. Memorial Hospital, New York, has 127 grains of radium and treats 2/3 of the cancer cases treated in that city. Of all radium produced 90% is used medicinally.—*Miss. Valley Medical Jl.*

Encouraging Results From the Use of Liver Extracts in the Uremic Coma of the Aged*

Clyde M. Gilmore, M.D., Greensboro, North Carolina

PROBABLY the chronic condition most commonly encountered by the general practitioner in the south is essential hypertension with its ultimate cardiovascular-renal syndrome. All of us are familiar with the picture; at first a hypertension with no organic changes and no cause thereof ascribable except a history of the same condition in one or more members of the family. As the years go on, in spite of the best that we can offer, our patients retain their high blood pressure and ever so insidiously visceral changes appear. So inevitable is this process that we expect eventually, in every hypertensive patient, either cerebral sclerosis, cerebral hemorrhage, myocardosis with decompensation, or nephrosis with renal failure.

To someone with a better command of the language than I should be given the task of expressing the despair, the helplessness of the family doctor as he watches his friends and patients who down through the years gradually approach the inevitable end of all hypertensive patients—vascular accidents, cardiac decompensation, or renal failure. All of us are alike helpless when cerebral hemorrhage or cerebral thombosis occurs. All of us are grateful for the reprieve offered by digitalis and other treatment in cardiac failure.

Until recent years we were comparatively helpless in the cases in which renal failure came first; that is, nephrosis with albuminuria, albuminuric retinitis and finally uremic coma.

In an address before the American College of Physicians in April, 1934, Dr. Richard Bauer,[1] Professor of Internal Medicine at Vienna, called attention to the fact that our knowledge of the chemico-physiological mechanism of death is incomplete, and reported spectacular results from the use of liver extract in a patient in uremic coma. He also reported good results in the treatment of coma due to protein resorption, the so-called non-nephritic uremia following injury, shock, acute toxemia etc. His explanation of the process is that the severe symptoms are due to a breakdown of protein and disturbance in nitrogen metabolism and he advanced a theory that "since liver extract contains some liver specific constituents, perhaps hormones, the question arises whether an improved liver function might successfully counteract the consequences of an increased breakdown of proteins. The action of the liver is diuretic and detoxicating."

Quoting further from Dr. Bauer's address, "During the process of increased breakdown of proteins, the organism becomes overflowed with these substances. Although the liver is capable of converting the ammonia of the amino acids into urea, this organ is unable to get rid of the numerous products of the broken-down proteins. Whenever the pyrimidin nucleus cannot be broken down any further, 'autonarcosis' of the organism is likely to occur. The sudden dramatic improvement due to liver extract injection . . . . may well be explained by the assumption that the organism apparently is liberated from the broken-down protein products, which have a narcotizing effect, as the result of the increased fermentative liver action."

"The rapid beneficial effect of liver extract injection in non-nephritic uremia makes a fermentative, hormonal action all the more likely as most of the patients are not anemic."

Dr. Bauer's address was reported to the members of this society through an editorial in *Southern Medicine & Surgery* by Dr. Wingate Johnson in May, 1934. At that time I had a patient in beginning uremic coma, liver extract therapy was tried and the case is reported herewith.

Case No. 1.—A woman, aged 82, a diabetic for the past ten years, with essential hypertension since age 60, stabilized for past two years on insulin, U 10 t.i.d., carbohydrate 130, protein 65, fat 60 plus.

May 1st, 1934, she was seized with nausea, vomiting, headache and dyspnea; her urine showed albumin 2-plus, no sugar, few hyaline and granular casts; abdominal distention was marked; she gradually became stuporous and lost consciousness. May 2nd she had uremic coma with uremic breath, non-protein nitrogen 96 mgm. per 100 c.c., 24-hr. output 390 c.c.

Liver extract was started in 2 c.c. doses every six hours intramuscularly, no other change in treatment. Output third day after liver extract started 500 c.c., 5th day 700 c.c. n-p.n. 7th day 70 mgm. per 100 c.c. After two weeks treatment she had no headache nor nausea and was taking her usual diabetic diet; the 24-hr. output was 1020 c.c. N-p.n. 30 days after beginning of treatment 46 mgm., 24-hr. output 1148 c.c., mind clear.

On June 8th the 24-hr. output was 1400 c.c. and the liver extract was discontinued. Output June 9th 900 c.c., 10th 950 c.c., 11th 600 c.c., 12th involuntary urine estimated at 600 c.c.; 13th uremic breath, n-p.n. 90, irrational. On June 14th liver extract was started again; urine output increased from 600 c.c. to 780 c.c. June 15th the output was 750 c.c., 18th 900 c.c., maintained at 900

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

to 1000 c.c. per day on a constant intake for 2 weeks on 1 c.c. of the extract twice a day. Again on June 30th liver extract was discontinued and in 24 hours the urinary output had decreased to 550 c.c., the patient had become mentally confused. In 4 days the patient was again in coma and liver extract was resumed, at this time giving 2 c.c. twice a day.

It was found that over a period of weeks the maintenance dose of 1 c.c. twice a day was sufficient to keep the patient from going into a coma and that when the n-p.n. exceeded 75 mgm. coma could be expected within 24 hours. During this period insulin was continued and was frequently adjusted to meet the patient's needs. Blood sugar determinations made each time patient was in a coma showed sugar within normal limits. The blood pressure ranged from 170/100 to 210/120. Twice within the next two months liver extract was discontinued and each time the result was a uremic type of coma within 4 to 7 days. The patient died of cerebral hemorrhage on September 27th.

Conclusions

1. The patient's life was prolonged 5 months by use of liver extract.

2. It was demonstrated time and again that large doses of the extract would bring her back to consciousness from uremic coma, and that a maintenance dose would prevent it.

Case No. 2.—Woman, aged 65, with hypertension for 15 years, 4 years ago had small cerebral hemorrhage followed by partial left hemiplegia.

On March 10th, 1938, she became confused as to speech, had uremic breath, was mentally confused, so was admitted to St. Leo's Hospital. The urine showed sp. gr. 1.015, albumin trace, no sugar, many hyaline casts with few white cells, hemoglobin 90%, r.b.c. 5.4 million, whites 14,000, n-p.n. 90, b.p. 216/110. Heart showed left ventricle enlargement, there was basal pulmonary edema, liver was enlarged two fingerbreadths. Glucose and saline were given intravenously; thorough purgation and theocalcium and iodine were given, and liver extract started.

On March 16th, n-p.n. was 60 mgm. and the mental condition was much better. On March 20th the patient was discharged as improved.

On March 23rd the confused state returned, breath was uremic, urinary output gradually decreased. By the next day patient was again in typical uremic coma with Cheyne-Stokes respiration. No change was made in treatment except to give 2 c.c. of liver extract 3 times a day intramuscularly and on the morning of the 26th the patient appeared normal mentally.

It should be noted that at this time and in subsequent attacks no change whatever was made in her usual treatment (phenobarbital, theocalcium and potassium iodide) except to vary the dose of liver extract. A maintenance dose of 1 c.c. of the extract twice a day was kept up until April 4th when it was deliberately discontinued.

On April 12th, the patient became mentally confused, began having hallucinations and passing urine unvoluntarily and a few hours later lapsed into deep coma of the uremic type. Urine showed 2-plus albumin, many hyaline casts, and the blood n-p.n. was 96. The liver extract was resumed 11 days after it had been discontinued, and in two days the patient was able to sit up, and her n-p.n. was 46. Maintenance dose of 1 c.c. a day was kept up for 2 weeks with patient doing fairly well and able to be up part of each day. On May 10th the output dropped from 900 c.c. to 300 c.c. per 24 hours and coma reappeared. With no other change in treatment the extract was increased to 4 c.c. a day with immediate response and the output increased to 1000 c.c. on 3rd day. Maintenance dose was then set at 2 c.c. a day until May 20th when it was again discontinued.

Sixteen days later previous symptoms reappeared, being preceded by marked decrease in urinary output. Symptoms were relieved 24 hours after liver extract was started and maintenance dose was kept at 2 c.c. for 7 days with no recurrence. Reduction of the dose to 1 c.c. resulted in coma on September 4th, with n-p.n. of 90. The dose was increased to 4 c.c. daily with immediate relief of symptoms. Maintenance dose was then established at 2 c.c. for the following month.

It was found that a maintenance dose of 2 to 3 c.c. a day would prevent patient' coma and that omitting this for 10 days would result in a return of the coma. The patient was thus kept alive in relative comfort until December 5th when she contracted a cold. On December 9th she died of lobar pneumonia.

Conclusion

This patient lived 10 months from initial attack of uremic coma and it was proved to our satisfaction that a proper maintenance dose prevented a return of the coma, that leaving off the extract would result in a return of the coma in from 10 to 12 days.

Case No 3 (summarized).—A man, aged 69, with hypertrophy of prostate, arteriosclerosis, severe albuminuria, n-p.n. 120, b.p. 120/100, p.s.p. total output 4% in 1½ hrs., uremic breath, secondary anemia. Liver extract recovered the patient of his coma, doubled his urinary output and reduced his n-p.n. by half. Over a period of 2½ years it was found that a maintenance dose of 6 c.c. per week would keep him going, that omission of the extract for 30 days would result in coma.

A number of similar cases have been treated with consistent and similar results. This type of treatment has given us best results in cases of essential hypertension with signs of impending renal failure. It is often found that the amount of albumin in the urine is not in ratio to the uremic symptoms. High n-p.n. often accompanies a trace of albumin, whereas a heavy cloud of albumin may be shown in the urine of a patient with a normal n-p.n. and no evidence of coma.

The factor responsible for improvement in these cases is present only in the plain and unrefined extract, no effect whatever was found when the concentrated liver extracts were used. It seems reasonable to assume that this unknown factor, whether it be a hormone or a vitamin, is lost as the extract is concentrated.

I have found only one of the commercial extracts' satisfactory for this purpose.

Summary

It is surprising that Bauer's suggestions as to the use of liver extract in coma were not followed up by the profession in this country. To date there has been published in the United States only one article which we may assume to be a result of Bauer's suggestions, and that one deals not with the

uremic state, but with the effect of liver extract on cirrhosis of the liver[2]. One article has appeared in a foreign journal on the use of liver extract in hepatic insufficiency[3]. There have been no reports and no discussions in English and American literature on this subject.

I realize fully the inadequacy of a study based on a small group of patients, most of them in the home without adequate laboratory facilities, and under conditions which preclude experimental research. However, I believe that we are justified from our experience in the past 5 years in suggesting that:

1. There is a specific factor as yet unknown in unrefined liver extract which relieves the symptoms in protein intoxications, such as the terminal uremic coma of the chronic hypertensive patient.
2. That the final and fatal event may be postponed by a maintenance dose of liver extract.
3. That the preparation is apparently non-toxic and that no reactions and no adverse effects have been noticed from its use.

It is hoped that some medical school or some group with clinical and laboratory facilities for research and experiment will investigate the possibilities of this form of therapy.

References

1. Bauer, Richard: New Treatment for Various Kinds of Coma, *Annals Int. Med.* 8:595-598, 1934.
2. Goldhamer, S. M.: Liver Extract Therapy in Cirrhosis of the Liver, Medical Journal Club, University Hospital, Ann Arbor, Mich., December 5th, 1932.
3. Dejust-Defiol, S.: Hepatic Extract and Hepatic Insufficiency, *Comp. rend.* Congr. internat. insuff. hepat., 1937.
4. Solution Liver Extract, Lilly. (The solution used is one made similar to that prepared by Strauss and Castle.)

Dr. Eugene Zemp, Columbia:

Dr. Gilmore has given us a very interesting paper and his evidence is sufficient to give more study to this form of treatment. In Vienna I was a student under Dr. Richard Bauer who suggested this treatment. The liver has so many functions that it must contain many and diverse substances. We are particularly interested in protein metabolism, in which liver function takes an important part. Removing an animal's liver results in discontinuance of urea formation. The constituents of liver extract by no means fully known. It has vitamin factors. Since hearing about this treatment I have used it in a few cases already stabilized on standard treatment. In two cases with edema improvement followed the use of liver extract. There did seem to be an increase in urinary output. Possibly the aged have some special deficiency which the liver extract supplies.

Dr. David T. Smith, Duke:

Dr. Gilmore has asked me to comment because I have used liver fractions in pellagra treatment. Liver has dozens of chemical substances of various composition and a great diversity of actions. Dr. Gilmore can find out about this himself, I am sure, as nobody else is better qualified to do so. I suggest that he try nicotinic acid. vitamin B^1, or B_2, or some others yet to be tried. Some pharmaceutical house will make additional fractions for you if all available ones have already been used.

Dr. Robert Wilson, Charleston:

I have nothing definite to contribute. This report is very interesting, but having nothing in my own experience on the subject I can only comment on the importance of knowing that such results have been obtained. Also it is important to know that the agent used is a harmless one, one that we can feel free to experiment with. By and by we will ascertain what function of the agent is concerned. Dr. Gilmore's report is exceedingly interesting and I hope we will be able to make clinical reports as Dr. Gilmore has requested.

Dr. C. M. Gilmore, closing:

I thank you, gentlemen, for your discussions. Concentrated liver extracts have no effects at all. I have tried nicotinic acid and it does not seem to work.

History of Radium

(D. Y. Keith Louisville, in *Miss. Val. Med. Jl.*, Mar.)

On Dec. 26th, 1898, report was made to the Academy of Science, Paris, by Monsieur and Madame Pierre Curie on their previous two years of laborious work in isolating this substance.

From Bohemia they obtained pitchblend. The crushed are was boiled in ordinary kettles and concentrated by distillation, mostly at night, as their days were full as teachers; 0.1 of a grain of radium was all they could extract from one ton of uranium.

Radium-bearing ore was discovered in Colorado and was named Carnotite after Marie Adolph Carnot, who analized it. Hamilton Phillips, of Princeton, concentrated radium from Carnotite in December 1902. In January, 1913, the first radium of high purity was produced by the Radium Chemical Company of Pittsburgh.

Between June, 1914, and January, 1917, Dr. Howard A. Kelly and Dr. James Douglas, a mining engineer, extracted 8.5 grams of radium from the Colorado mines. The price was $120 per mgm.

Radium was identified in Belgian Congo in 1913, first attempt at production 1920. This ore was much richer and in a short while the price was reduced to $100 per mgm. At the end of 1922 the radium industries of U. S. was producing 75% of the world's production. The radium content of the Congo ore was 40 times greater than of the American; the cost of production was less, so they were able to sell at $70 per mgm. and the U. S. radium industries were wiped out overnight. In 1934-1935 the richest vein of radium yet discovered was found on the eastern edge of the Great Bear Lake and radium is now being produced by a Canadian Corporation and sold at $30 per mgm.

The fight for world monoply is now on between Belgium and Canadian corporations. Both will probably survive as the Belgium ore is rich in copper and the Canadian ore is rich in silver.

Appalling Consumption of Barbituric Acid.—More than 1,200,000,000 grains of barbituric acid derivatives were sold in the U. S. in 1936.—*Jl. A.M.A.*, Apr. 8th.

Almost certainly there has been rapid increase in the amount sold since 1936, and the amount sold then was nearly 10 grains for ever man, woman and child in the U. S.!

Persistent unaccountable cough in children frequently responds to a series of x-ray applications to the hilus regions.

Brain Injuries in General Surgery*

Donald B. Koonce, M.D., F.A.C.S., Wilmington, North Carolina

THIS title was selected for two reasons: 1) the author's experience with cerebral trauma has been that of a general surgeon; and, 2) the great majority of acute cerebral traumata have been treated by general surgeons and undoubtedly will be for many years to come.

We are immeasurably indebted to the neurological surgeons for the great increase in the past few decades in knowledge of cerebral physiology, and the improvement in technique in brain surgery. However, the proof of the value of new methods and principles in the treatment of acute cerebral trauma has remained to a great extent in the hands of the general surgeon. There are various reasons for this. Mainly, the man especially trained in neurological surgery is necessarily confined to the larger clinics, whereas cerebral injuries continue to occur generally with no regard to the location of neurological clinics. Very few of the patients with cerebral injury can be moved hundreds of miles to a clinic safely until long after the necessity of so doing is over. At various places the idea has been entertained of having a neurological surgeon visit hospitals over a large area periodically. This is impracticable as no neurological surgeon has time for such visiting; and, more important, the most vital time in the treatment of these cases is the first three days, and the visiting neurological surgeon would be of little more value than if the patient were allowed to wait and be referred after the acute stage.

Acute cerebral injuries may best be discussed under four classes: fractures of the skull with the accompanying brain injury, concussion, contusion and laceration, and intracranial hemorrhage. In all four of these types, except in cases where one of the vital centers is injured, the underlying principle is the same, that of increased intracranial pressure. The cranial cavity is fixed as to space and therefore the volume of its contents must remain the same. These contents are the brain and its coverings, the cerebrospinal fluid, and blood. In cerebral injuries the volume of any of these may be increased with a sacrifice of the space needed by the other two. The cerebrospinal fluid is the only one of the three that can sacrifice its allotted space further than Nature's compensation stage without serious consequences. If the space allotted to the cerebral circulation is encroached upon, too little blood is supplied to the brain, and anoxemia with its resulting symptoms occurs. Also, extra circulation necessary for repair of injured brain tissue is impossible. If the space allotted to the brain itself is encroached upon, cortical compression results. Edema of the brain resulting from anoxemia or cortical compression, or as is often the case a combination of both, may easily continue until the fairly well protected basilar or vital centers are involved with the resulting cardio-respiratory death.

To repeat, the one main principle underlying acute cerebral injuries is increased intracranial pressure as a result of an attempted increase in volume of the three elements contained in the cranial cavity Thus the treatment of these conditions necessarily becomes relegated to the relief of this increased pressure The exceptions are, of course, those cases in which one or more of the vital centers are initially injured, and these are fatal within a few hours in spite of treatment.

The treatment of acute brain injuries was formerly ultraconservative, mainly because of ignorance, with dependence upon sedation, watchful waiting and prayer. Then came the stage of improved technique in brain surgery and early advances in the knowledge of brain physiology. This resulted in radicalism and the various results of just enough knowledge to be harmful. During this period the importance of reduction of intracranial pressure was first realized and was accomplished on the slightest provocation and at the earliest possible time by means of operative decompression. In 1921, the reduction of cerebral pressure by means of dehydration had its origin in the neurosurgical clinic at the University of Pennsylvania. The general surgeon was by this time so apprehensive of operative decompression, because of its high mortality and many postoperative psychoses, that he welcomed dehydration as a long-sought panacea for brain injuries. The routine treatment for cerebral injuries in most general hospitals became drainage of the spinal canal and intravenous hypertonic glucose solution every two hours, complete limitation of fluids by mouth, and strenous purgation. This resulted in very little if any improvement in mortality figures and much discredit to dehydration.

Now it seems that our treatment of brain injuries is becoming sanely conservative because of intelligent study and knowledge of the principles

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

underlying increased pressure. Craniotomy as a means of decompression has been generally discarded, being now used only in cases of intracranial hemorrhage, depressed fractures, and compound fractures where there is an extrusion of brain material and danger of infection. In cases of clots and simple depressed fractures operation may be deferred, while only rupture of large vessels or compound fractures are considered justifiable causes for immediate operation. Some surgeons are even too conservative, admitting no indications for operation and saying those patients who recover would have recovered without an operation.

Dehydration, though I believe still generally accepted, has been put on a common-sense basis and remains invaluable. However, I am convinced that I have managed cases in which more was suffered from the dehydration procedure than from the cerebral trauma. Spinal punctures are being used more and more for purely diagnostic purposes and for the drainage of bloody spinal fluid. As to spinal punctures, I can see no cause for concern if wisely done. However, as Fay describes, in cases with much cerebral edema in which strenuous spinal drainage is introduced late, the danger of herniation of the brain stem is a very real one. The danger of increased hemorrhage by spinal puncture may be overcome where necessary by the gradual introduction of air intrathecally. Physiological decompression by means of hypertonic solution intravenously, limitation of fluid by mouth, and purgation is becoming more important and yet more conservatively used. The substitution of sucrose for glucose in hypertonic solutions by vein has limited the danger of a flare-back of cerebral pressure caused by the fluids drawn into the blood stream passing rapidly back into the tissues. It is important to remember in dehydration that if the cerebral tissues are dehydrated the fluids removed from the tissues must be disposed of by elimination.

As to the use of morphine as a sedative in cerebral cases, theoretically it is safer and wiser to use bromides and chloral hydrate. However, contrary to the teachings of most textbooks and neurosurgeons, I have never seen any ill effects that I could honestly attribute to the use of morphine. The good effects of morphine sedation seem to me to more than counterbalance the dangers of respiratory depression.

The most impressive development in the past few decades is the realization of the importance of immediate treatment of shock, temporarily disregarding every other feature of the case if necessary. A very large number of deaths from cerebral injuries occur in the first 48 hours, or even 24 hours, and a goodly number of these are due to shock. Immediate treatment should be instituted to restore blood volume and body fluids, and to prevent further disturbance of chemical balance. A solution of sucrose with gum acacia intravenously, or blood transfusion, has given the best results in my experience. Stopping continued hemorrhage is the only emergency procedure, other than treatment of shock, to be advised; and this can usually be done by pressure bandages. Detailed examinations, spinal puncture, suture of wounds, x-ray examination, or any unnecessary disturbance of the patient should be postponed until recovery from shock is well established.

X-ray examinations have no place in the immediate treatment of an acute cerebral injury, except for foreign bodies and depressed fractures, x-ray pictures are of purely academic and possible legal value, even at a later date. The patient has no serious symptoms from a fractured skull but from the comcomitant brain injury which does not show in x-ray examinations, and often is far removed from the site of fracture. X-ray examinations early can cause considerable damage due to disturbance of the patient and are never satisfactory until the patient is coöperative. If done early they usually have to be repeated.

Confinement to bed is in most cases, I believe, too long. After the spinal fluid is clear and the cerebrospinal pressure normal the repair process of the brain is not impeded by allowing the patient to get up. The fracture of the skull, unless compound or depressed, can be disregarded, as there is no chance of displacement of fragments or nonunion. A week or ten days after regaining consciousness is usually adequate confinement. However, the patient should be carefully instructed as to activities, diet and mental strain. Fay keeps his patients on a fairly strict dehydration regimen for three months after discharge from the hospital. This is rather rigorous but it is imperative to check patients frequently because of the many posttraumatic psychoses and the many cases so aptly called compensationitis. The rehabilitation of the patient should be kept constantly in mind from the time of admission. Too many men work only in the present with little regard for the future of the patient.

A short survey of cases of cerebral injuries admitted to the James Walker Memorial Hospital, at Wilmington, N. C., during the eleven years from January 1928 to January 1939 shows statistics, as well as I can gather, fairly representative of the smaller general hospitals throughout the country.

Modern vehicles of transportation, particularly

the automobile, have markedly improved in the past few years. As they are being made more comfortable, faster, more economical to operate, they are become more dangerous and therefore more expensive because of the injuries. The death rate from automobile accidents in the United States was 1.8 per 100,000 population in 1910; 10.4 in 1920, with a total number of deaths of 9,103; 24.5 in 1930, with a total number of 29,080; and 28.8 in 1937with a total number of 37,205. In North Carolina only 133 persons were killed in automobile accidents in 1920, whereas 1,123 died from the same cause in 1937.

TABLE 1

Death from automobile accidents in the United States and North Carolina

	United States		*North Carolina*
	Deaths per 100,000 population	Total deaths	Total deaths
1910	1.8		
1920	10.4	9,103	133
1930	24.5	29,080	
1937	28.8	37,205	1,123
1938			937

TABLE 3

Causes of injuries in series

	%
Vehicles of locomotion caused	298 (62)
Automobile accidents alone	273—68 pedestrians
Criminal cases	103 (21)
Other causes	82 (17)
Total	483

Of the total 483 cases in our series 298 (62%) were caused by vehicles of transportation including everything from aeroplanes to horse and buggies—273 by automobiles alone with 68 of these victims being pedestrians. One-hundred-and-three (21%) of the injuries were classed as criminal assaults; only 82 (17%) were due to what might be called innocent accidents.

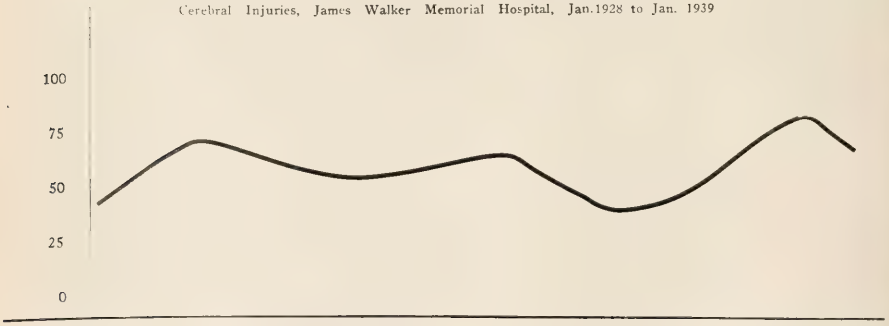
TABLE 4

Causes of accidents in which death occurred

	%
Vehicles of locomotion	82 (68)
(autos alone 79 (66%) (pedestrians 24)	
Criminal causes	30 (25)
Other causes	8 (7)
Total	120

TABLE 2

Cerebral Injuries, James Walker Memorial Hospital, Jan. 1928 to Jan. 1939



1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Cases:			*							
35	39	48	34	31	38	48	34	40	77	59

Total Cases 483

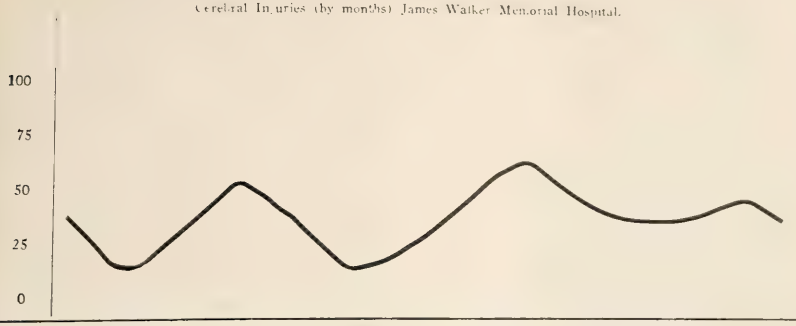
The deaths in North Carolina decreased in 1938 to 937 and this decrease is representative of the whole country. As the number of transportation accidents have increased so have the cerebral injuries.

The present series runs a pretty uniform course during the eleven years until 1937 and 1938.

Mortality figures show that of the total 120 deaths in the series 82 (68%) were due to vehicles of locomotion and 79 (66%) to automobiles alone; 30 deaths (25%) were due to criminal assaults and only 8 (7%) were due to innocent accidents.

TABLE 5

Cerebral Injuries (by months) James Walker Memorial Hospital.



	Jan.	Feb.	Mar	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.
Cases	36	22	32	48	29	41	61	44	39	40	53	31

Total cases 483.

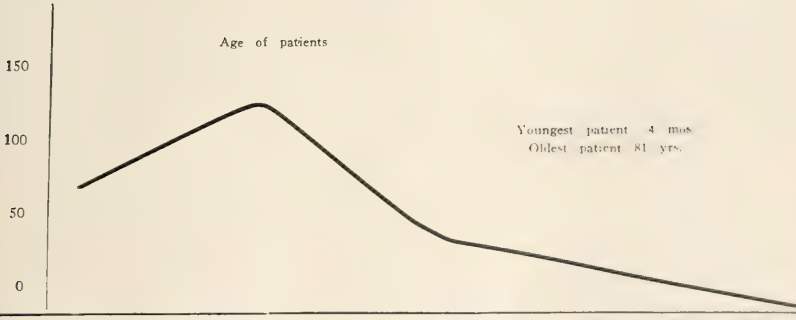
As to the time of the year that most of the cerebral injuries occur, the three peaks reached in the months of April, July and November can again be blamed on the automobile in our locality. The Coastal Highway runs through Wilmington and the transient Florida population is returning home at the end of the season in April causing traffic to increase and also accidents. In July the summer tourists are going to the surrounding beaches. In November a new Florida season is beginning and the football season is in full sway, though only two of the cases of injury in our series were sustained in football games.

By far the greatest number of cases occurred in the third decade of life as this is the most active period, whereas the mortality rates increase proportionately with age. Males made up 80%, whites 68%.

TABLE 7

Types of Cerebral Injuries in Series	
Fracture	278
Concussion	175
Contusion	17
Hemorrhage	23
Total	483

TABLE 6



Years	10	20	30	40	50	60	70	80	90
Cases	98	128	81	46	34	24	12	7	
Mortality % —	20	12	23	25	21	38	54	66	100

Of the total number of injuries 278 were fractures of the skull; 175 were concussion, 17 contusions of the brain and 23 intracranial hemorrhages. Of the total deaths, 81% were in the fracture group.

TABLE 8
Types of Injuries in which Death Occurred

	%
Fracture	97—(81)
Concussion	8—(7)
Contusion	5 —(4)
Hemorrhage	10—(8)
Total	120

TABLE 9
Mortality

Total Cases.....483
Total Deaths.....120 Total Mortality 25%
Within 48 hrs. 81. After 48 hrs. 8%.
Within 24 hrs.66 (55% of Total).

In our series of 483 cases the deaths were 120, a total mortality rate of 25%, Fay's was 18.3% in his dehydration series; but of the various series reviewed such as those of Early with 37.2% mortality in fractures of the skull, of Connors with 21.7%, McCreery and Berry with 39%, it seems to be about the average mortality in cerebral injuries. If the 81 deaths within 48 hours are subtracted from the total deaths, the mortality drops drastically to 8%.

The treatment of the cases in this series has been in the hands of a staff of five visiting general surgeons. Reviewing the cases over the eleven-year period, it was found that there was still a hang-over from the operative decompression era for the first few years of that period. Since that time, however, operations have been limited to cases of hemorrhage and depressed and compound fractures.

TABLE 10
Operative Interference

Total Cases Operated on 53. Total Cases 483
Deaths in Cases Operated on 23—(43%).
Cases Operated on Within 24 Hours 33. Mortality 62%
Cases Operated on After 24 Hours 20. Mortality 38%

In 53 cases intracranial operations were performed over the period reviewed with a total operative mortality of 43%. The mortality of the cases operated on within the first 24 hours was 62%, supporting delayed operation where possible. The treatment in this series has at no time had a tendency to very strenous dehydration, but spinal punctures and drainage have been numerous and free untill the past few years when they have been much less frequent.

One very important and unfortunate omission in this series is that of a follow-up survey. Such a survey is impossible due to the fact that there have been no follow-up records kept except on the private cases, and these are kept in the private files of the individual surgeons. Such a survey I believe would pretty well compare with those of most serious.

The most important observation to be made from this series of cerebral injuries is that though the mortality rate with the present more intelligent handling is still high, the greatest hope for improvement is definitely in prevention of these accidents. Local and federal legislation and supervision to limit accidents of transportation and criminal assaults would materially decrease the number of these tragic accidents with their permanent ruining of lives and terrifying mortalities.

Bibliography

COLEMAN, C. C., *J.A.M.A.*, Vol. 109, page 1616.
EARLY, D. E., *J.A.M.A.*, Vol. 104, page 2332.
FAY, TEMPLE, *Annals of Surgery*, Vol. 101, page 76.
CONNERS, J. F. & WRIGHT, L. T., *Annals of Surgery*, Vol. 100 page 996.
FRAZIER, C.H., *Annals of Surgery*, Vol. 101, page 761.
GRASER, M. A., & BLAINE, E. S., *J.A.M.A.*, Vol. 107 page 21.
GURDJIAN, E. S., *Annals of Surgery*, Vol. 102, page 89.
KOHLSTAEDT, K. G., *J.A.M.A.*, Vol. 108, page 773.
POPPEN, J. L. *Surgical Clinics of N. A.*, October, 1934, page 1191.

DISCUSSION

DR. J. G. LYERLY, Jacksonville:

I enjoyed Dr. Koonce's paper and agree with him that this type of case is one that every doctor has to contend with . . . The duration of unconsciousness is an important sign. The injury is considered severe if unconsciousness persists 30 min., critical if the patient can not be aroused. This group is fatal. There is nothing that can be done. Sometimes it is difficult to classify cases, and the middle group is the one hardest to standardize. Each case should be treated individually. Enthusiasm for dehydration treatment is waning. Glucose solution relieved for a time Enthusiasm for this has also waned. Sucrose is eliminated through the kidneys, probably the best means used for dehydration Do not deprive patients of fluids. When we give sucrose we should pick the cases. Those patients with high temperature need fluids. Elimination of fluids can be dangerous. In operative cases use your best judgment. Prevent infection first. Hurry may not be necessary. To relieve compression, make exploratory drill hole if in doubt. We do less spinal punctures as we go along. Harm may be done by punctures. Spinal puncture had best be done after several days. There is danger in doing spinal puncture too soon.

DR. F. E. KREDEL, Charleston:

An important point that Dr. Koonce brought out is that the general man does most of these cases. I wish to stress the point that you should not do too much to the patient—particularly not to move him about.

In Operative treatment should be given in the simple depressed fracture; but wait from three to seven days and perform operation after acute danger is over. I never dared to use morphine in head injuries—have used phenobarbital as a rule. I believe in moderate amounts of dehydration. I do not use lumbar puncture as much as I used to, having found good old Epsom salts effective.

DR. A. G. BRENIZER, Charlotte, N. C.:

In head injuries with swelling of the brain and cutting off of fluid at arachnoidal villi, an objection to ventricular puncture is sometimes raised for the reason that you get so little fluid from the ventricle the compression is not

(To Page 189)

Therapeutic Use of Adrenalin in Spastic Conditions Due to Autonomic Nervous System Imbalance*

James Thurston Wolfe, M.D., Washington

MY clinical studies for 30 years of patients suffering with bronchial asthma lead me to the conclusion that asthma, or more properly, bronchospasm, is due to sustained motor stimulation of the circular bronchiole muscles by way of the motor fibers of the vagi. In many instances this stimulation is brought about by reflex mechanism wherein the sensory fibers of the vagi pick up stimuli at irritated sensory portals, transmit these stimuli to the vagal centers, where they are passed over to the motor nuclei and then along the motor fibers of the vagi to the end organs involved in the spasm, which end organs in the case of asthma are the bronchial tubes, thus producing contraction and constriction in these tubes, or bronchospasm, or asthma.

Having realized for many years that this same nervous mechanism operates in spasm of other circular hollow organs, such as the small and large intestine, stomach, pylorus, ureters and bile ducts, it was relatively easy to understand how excessive stimulation through the vagi can produce spasm of the circular muscles of any of these named parts.

The portals that most readily afford irritating stimuli to the vagi are the outer ear canals, the ethmoidal region of the nose, the posterior pharyngeal wall, the bronchial tree, the heart and the abdominal viscera. Inflammatory conditions in one or in several of these portals provide irritating stimuli which may be picked up by the sensory fibers of the vagi to produce reflexly motor stimuli to any of the hollow organs supplied by the motor fibers of the vagi.

With this knowledge in hand and having learned that the vagi and the sympathetic nerves, the two divisions of the automatic nervous system, normally are in perfect balance resulting in normal function of the organs of the chest and abdomen, and that the sypmathetics are normally antagonistic to the vagi, it follows that when, because of disease, the vagi gain dominance and produce spasm in any hollow viscera, stimulation of the sympathetic will offset and neutralize spasm due to the vagi.

To stimulate the sympathetics, adrenalin is probably the most rapidly effective therapeutic agent available and this fact has been taken advantage of for many years in attacks of asthma as is demonstrated by the well known fact that a hypodermic injection of adrenalin, in most instances promptly relaxes spasm in the bronchioles.

Recognizing the identical mechanism in the neurophysiology which produces spasm in the bronchial tubes and in the pylorus as described in my former paper[1] for four years I have been treating attacks of acute pylorospasm by hypodermic injections of adrenalin, and in every instance relief has been brought about within a few minutes. This work was reported in a paper[2] read before the annual meeting of the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, December 9th, 1937.

Since that paper was published[2], opportunity has offered to employ adrenalin to relieve distress and broaden its field of usefulness.

It is the belief of the writer that a large percentage of acute attacks of pain within the abdomen are due to spasm or colic, and not to inflammation, per se, and that spasm in inflamed hollow viscera is more painful than spasm without inflammation. This belief is based on the fact that patients with suppurative and abscessed appendices have walked in my office complaining of only slight discomfort. Also one case of generalized suppurative peritonitis secondary to appendicitis suffered only mild pain, though the abdomen was full of pus when opened. Fortunately this case terminated by recovery.

Autonomic nervous system irritation can also result in trophic disturbances of the skin, such as herpes zoster, herpes of the arms and hands and can also exert marked trophic influence over the muscles of the chest resulting in atrophy, as is evidenced in many cases of bronchial asthma of long standing.

The following brief case histories will serve to illustrate the clinical results of therapeutic application of measures to terminate spastic conditions other than asthma.

Case No. 1: A married, white woman, aged 21, weighing 97 pounds, thin, nervous, mildly hysterical. She was married on June 4th, 1938, had a big church wedding, following manifold preparations including furnishing her apartment. The couple took a motor trip of 3000 miles. Upon return the patient was suffering from vomiting, loss of appetite and pain at lower end of sternum which kept her awake at night. Vomiting was not due to pregnancy. Examination showed marked tenderness at tip of ensiform cartilage. Hypodermic injection of 4 minims

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

of 1:1000 adrenalin solution August 23d, 25th and 26th, completely relieved pain and vomiting. *Diagnosis*: Pylorospasm following exhaustion.

Case No. 2: A large man, aged 62 years, overweight, had a very acute attack of appendicitis June 5th, 1938. As the patient was a poor surgical risk, I carried him through his attack which was followed June 20th by an attack of acute pylorospasm. Adrenalin administered on June 20th and 22d completely relieved his pain and during the month of July seven treatments in my office brought about relief of the spastic condition which was establishing itself after his appendicitis. *Diagnosis*: Pylorospasm following acute appendicitis.

Case No. 3: A man, aged 43 years, was first seen February 10th, 1937, with pain in epigastric region, tenderness at tip of ensiform and over appendix and a distinctly dilated stomach. After several examinations of abdomen it was concluded that he had a chronically infected appendix which was causing reflex pylorospasm. Operation March 4th revealed an adherent retrocecal appendix and sharply flexed ileum. A definite band from tip of appendix extended deep into the pelvis. Adhesions were freed, band severed and appendix removed. On 23d of June, 50 days after his operation, mild recurrence of pylorospasm required two injections of adrenalin. September 24th, six months after operation, October 1st, 9th and 15th, he was treated and relieved until November 1st, when he had a sharp attack of pylorospasm lasting 8 days, during which period he had five injections of adrenalin. In February of 1938 he had a mild recurrence requiring injections on the 16th and 28th, since which date for a period of one year he has had no recurrence. He had suffered almost constantly with acute spastic pains for over 12 years and no treatment had afforded relief. His appendix was probably the inciting cause of his pylorospasm and the long duration of his illness required a full year for his recovery after operation. *Diagnosis*: Reflex pylorospasm caused by chronic appendicitis.

Case No. 4: A single, 30-year-old, thin, undernourished colored maid of a school principal patient of mine, came to me August 24th, 1938, complaining of vomiting at any time and of disabling pain in her upper abdomen particularly after walking. Her abdomen was negative except for tenderness at tip of ensiform. She received 10 injections of adrenalin from August 24th to September 17th at which time her pylorospasm had apparently subsided as she had no pain or vomiting in almost six months. *Diagnosis*: Pylorospasm due to autonomic imbalance caused by generally run-down health.

Case No. 5: A maiden lady, aged 32 years, was taken with violent attack of acute pylorospasm at 10 a.m. August 19th, 1938, at her office where she is secretary to an insurance official. I found her lying on her right side on a couch with knees slightly flexed and moaning in pain. Examination of her abdomen revealed the portion below the umbilicus completely relaxed permitting deep palpation of appendix which was negative. The muscles of the upper portion of her abdomen were intensely rigid and unyielding to palpation. This patient, a graduate nurse who had taken up secretarial work, readily understood my purpose when I explained to her that I would attempt to relieve this spasm with adrenalin, 5 minims of which were given hypodermatically followed in 10 minutes by a second similar dose. Relief was complete and prompt. I saw her about 5½ hours later and again administered 5 minims of adrenalin to prevent recurrence. In six months she has had no further attacks. This patient had had an operation for removal of kidney stone 22 months previously and she feared she was having a recurrence of kidney colic. *Diagnosis*: Acute pylorospasm, cause unknown.

Case No. 6: Married woman, age 32 years, with history of three attacks of vomiting in 1933. About six in 1934 with gradually increasing attacks of vomiting with some pain in epigastric region in 1935, 1936 and 1937. During 1938 before coming to me she vomited almost daily and had some abdominal pain. Examination of her abdomen showed marked tenderness at tip of ensiform and she was quite tender over appendix. Any excitement, even mild, such as friends or relatives coming to her home, aggravated her vomiting. She could not go auto riding or to any social function without vomiting. Eleven treatments from October 31st to December 2d, 1938, resulted in cessation of vomiting and she has reported full recovery for the past 3 months. *Diagnosis*: Chronic pylorospasm caused by chronic appendicitis which improved under colon bacillus vaccines.

Case No. 7: A married man, aged 42 years, came to me September 20th, 1938, complaining of excessive nervousness, worry, inability to carry on his work—all due to the fact that his wife had deserted him. I prescribed mild sedatives and change of mental activities. He came back 12 days later, November 2d, complaining that he could not retain any nourishment. I found his abdomen tender at tip of ensiform and began administration of adrenalin by hypodermic. His dosage was 3 minims of 1:1000 solution of which he received six doses in the period between November 2d and November 11th, at which date he reported that his vomiting had completely ceased for several days and that he could eat and retain his food. This case was one where the conscious mind dominated the autonomic nervous system. *Diagnosis*: Pylorospasm of psychogenic origin.

Case No. 8: A white woman, aged 60, was seized with attack of renal colic at 4:30 a.m., December 19th, 1938. Her suffering was intense and I was unable to see her until six hours after onset, when I administered 5 minims of 1:1000 adrenalin solution by hypodermic. After ten minutes a second similar dose was given, which brought complete relief. The right kidney was tender and sore for several days and she had only one further injection which was given the second day for prevention of further spasm. Later clinical and urinary study confirmed the diagnosis of renal colic. I was glad to try out the treatment on a case of this kind. *Diagnosis*: Renal colic.

Case No. 9: The writer had worked hard and continuously during December 1938, and in addition had attended several late parties at that season, the last of which was on the night of December 24th, lasting until about 1:00 a.m. Arriving home very fatigued and going to bed at once I was awakened at 2:30 by intense pain in the lower abdomen, which was only slightly intermittent and which was of such severe nature that only a few minutes sleep were had. My abdomen was rigid and hard as a wooden ball to my finger tips. At 6:30 Christmas morning 3 minims of 1:1000 adrenalin solution under the skin of the abdomen brought relief within 10 minutes. I fell asleep and slept soundly until 7:30 p.m. The relief of such excruciating pain by such a small dose was almost unbelievable. *Diagnosis*: Acute enterospasm, caused by fatigue.

Conclusion

1. Spastic pain in the abdomen due to vagotonic state yields to hypodermatic use of adrenalin.

2. Many useless surgical operations upon the abdomen may be prevented by this therapeutic measure relieving the acute pain.

3. Careful study and history of the patient and

his environment must be made to discover the cause of these spastic conditions and the cause may prove to be a chronic condition requiring surgery, such as the case of chronic appendicitis reported.

4. Relief of spastic conditions within the abdomen by adrenalin seems to be much more permanent than relief of bronchial asthma.

5. The diagnosis in these cases were my own and I feel that the results obtained by the treatment confirmed them.

—1610 16th Street, N. W.

References

1. Wolfe, James T. Etiology, Mechanism and Treatment of Asthma. *American Medicine*, October, 1934.

2. Idem. Hypodermic Use of Adrenalin for Differential Diagnosis between Acute Pylorospasm and Ruptured Peptic Ulcer. *Vir. Med. Monthly*, July, 1938.

Discussion

Dr. John Wyatt Davis, Jr., Lynchburg:

Dr. Wolfe's paper is interesting and instructive. He has presented a treatment new to me for conditions with which a large percentage of patients who come to a general practitioner suffer. I know of a number of people whose sufferings would have been lessened had I heard this paper last year instead of today.

Although this paper is brief, thoroughness has not been sacrificed. In the beginning of his study, he considered, carefully, what takes place in the pylorus or the kidney when a patient is suffering with pylorospasm or renal colic, then he considered the neurophysiology, to determine what would produce a pylorospasm or renal colic. His next objective was to find a drug, whose action was antagonistic to the nervous mechanism which would produce pylorospasm or renal colic. This is a rational, orderly procedure. We should accept his conclusions as facts based upon sound reasoning, proved by clinical observations, and compliment the author.

In regard to the effects of adrenalin in the alimentary tract, taken by mouth it produces a local constricting effect in the mouth, esophagus, stomach and rectum; but, because of the local irritation in the stomach, it may produce vigorous peristalsis, and in the rectum, tenesmus and defecation.

Given intramuscularly and, more effectively, intravenously, it lessens or abolishes peristalsis of the stomach and intestines, but it increases the tone of the sphincters—pyloric, ileocecal and anal. Thomas states that while the tone of a relaxed pylorus is improved, that of an already contracted pylorus is reduced. Hoskins states that by vein the drug stops peristalsis in dosage that leaves blood pressure unaffected. The motility of the gallbladder is inhibited.

There is difference of opinion as to the effect upon gastric secretion, but mucus, saliva and bile are increased, while the pancreatic juice is diminished.

The effect upon circulation: Given intravenously in weak dilutions, the rate of administration is steadily increased, the action on the circulation shows the following stages: 1) a falling blood pressure, due to stimulation of the vasodilators, 2) moderate constriction of the arteries with increased heart rate and rise in blood pressure—this is the desired effect in therapeutics, 3) marked constriction of the arteries and a great rise in blood pressure with secondary slowing of the heart, 4) dilatation of the heart, auriculoventricular block or ventricular fibrillation and death.

Adrenalin is also used extensively in diagnosing sympathicotonia, the condition in which a patient has a sympathetic dominance. This test is as follows: If after the intramuscular injection of one gram of adrenalin* there is an increase in heart rate of one-third above the normal rate and a rise in blood pressure of 30 to 40 mm., then this patient is suffering from smypathetic dominance.

Dr. J. T. Wolfe, closing:

I wish to thank Dr. Davis for his kind and generous discussion of my paper. You will notice that I recommend the use of moderate doses of 1:1000 adrenalin solution, namely, 3 to 5 minims, depending upon the reaction of the patient and the need for repeating the dosage. It appears to me that the dose mentioned by Dr. Davis for determination of sympathicotonia, namely, intramuscularly injection of 1 gram of adrenalin, is an unusually large amount of the drug to be given, as 1 gram of adrenalin, is equivalent to 1000 c.c. of 1:1000 solution which is 3000 to 5000 times the dosage I use. These small doses do not have harmful effect and can be discontinued as soon as relaxation of the spasm is effected or upon manifestation of nervous reaction of the patient. The effect of 3 minims of 1:1000 solution in my own case was almost miraculous.

*Editor's Note.—It is assumed that Dr. Davis uses the word "adrenalin" to mean the ordinary 1-1000 solution.

Ezra Stiles Ely, Benefactor of Jefferson Medical College

(T. B. Throckmorton, Des. Moines, in *Jl. Iowa State Med. Soc.*, Mar.)

Dr. George McClellan acquaintanceship among the Scotch-Irish gave him entree to the trustees of Jefferson College, located at Canonsburg, Penn., and he reasoned that if he could get the sanction of the Board of Trustees to establish a medical department of the school in Philadelphia, he might be successful in obtaining a charter from the state legislature. The college adopted the articles authorizing the establishment in the city of Philadelphia of a Medical Faculty, as a constituent part of Jefferson College, to be styled the Jefferson Medical College.

Thus it came about that the hall of the Jefferson Medical School was opened March 8th, 1825. When the fall term began the following October, 109 students had matriculated. Questions among both faculty and students were whether the school could legally graduate the senior class. In the spring of 1826, while the state legislature was in session, Dr. McClelland left Philadelphia early one morning by horse and sulky. Reaching Lancaster during the night, a distance of 60 miles, he obtained a fresh horse and continued his journey, arriving in Harrisburg the following morning, a distance of 100 miles. On April 7th, 1826, the bill which gave life to the institution in Philadelphia was enacted by the legislature and approved by Governor Andrew Schultze.

The faculty was young and ambitious. McClellan, its prime mover, was only 24 years of age, and was without financial backing. Lectures were being given in a makeshift place on Prune Street, now 5th and Locust streets. The bill authorized the Board of Trustees of Jefferson College at Canonsburg to elect 10 additional trustees, "who may be residents of the city or county of Philadelphia. Ezra Stiles Ely, pastor of Old Pine Street Presbyterian Church, was the one best equipped intellectually and financially to give the urgently needed aid. In March, 1827, the Board of Additional Trustees of Jefferson College agreed to pay the Rev. Dr. Ely a sum of $1,000 a year for a term of 5 years, providing he would erect a Medical Hall for the use of the School. By the following August the new college building was ready for use. This was the home of Jefferson Medical College between the years of 1828 and 1846.

Surgical Observations

A Column Conducted by
THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

THE DIAGNOSIS OF OBSCURE THYROID GLAND DISEASE

THE diagnosis of disorders of the thyroid gland is becoming more and more important, especially the diagnosis of the obscure types. In the ordinary type of hyperthyroidism with palpable enlargement of the gland, tachycardia, nervousness, eye symptoms and an increased basal metabolic rate, the diagnosis is usually very easy. Unfortunately, however, many types of serious thyroid gland disturbance are difficult to diagnose, and only a very careful study of the patient makes it possible for a diagnosis to be made.

Recently we have noted a number of cases of nervousness with variable basal metabolic rate findings, which were evidently due to some disturbance of the thyroid gland. Two of these cases are of particular interest. In both there was considerable nervousness. At times the nervousness would disappear for a few weeks and then return. The metabolic rate determinations varied considerably from time to time—from a slight subnormal to a moderate increase in rate. The rate was never very high.

Iodine therapy gave considerable relief. General medical treatment aided to some extent, but the nervousness always returned. Palpation of the thyroid gland did not reveal any definite enlargement. At operation, however, adenomatous growths were found extending downward and backward. Removal of these growths gave these patients prompt relief from the nervous symptoms.

A number of other cases of a similar type have been operated upon and we believe the results will be equally as good. In one of these cases there was a small adenomatous growth extending from the lower pole of the left lobe of the thyroid gland downward into the substernal space, the removal of which will surely give the patient relief.

A careful pathological examination of all specimens revealed similar pathology.

It is true that a definite diagnosis is not possible in many cases of so-called nervousness, but in every instance a careful study of the patient should be made with particular reference to the thyroid gland. Even though the gland is not enlarged or irregular in shape on palpation, yet it may be there is an enlargement or an adenomatous growth in a position which cannot be palpated. Even a small growth is sufficient to cause pronounced symptoms. Removal of this diseased portion is most promising of relief.

While the basal metabolic rate determination is an important part of the diagnosis of any suspected thyroid disease, yet it must be remembered that sometimes there may be considerable trouble with the thyroid gland with a rate that is normal or even subnormal. It must be kept in mind that a diseased gland may produce a secretion which produces a typical symptoms and which, if allowed to go on, may render a patient practically an invalid, certainly incapacitate the patient for any type of work.

The complaint of nervousness is, of course, a common one and comes from many common and easily discovered causes. It also comes from many obscure conditions other than a diseased thyroid gland, but only a careful examination and perhaps repeated examinations, together with a careful study over a period of time, can make it possible to determine the cause of the trouble.

In a number of patients I have seen extreme nervousness without a greatly increased basal rate relieved promptly and permanently by the removal of an adenomatous growth from the thyroid gland, which growth was so situated that it was not palpable externally.

At the time of operation a careful examination of the thyroid area should always be made, including a search for aberrant lobes, retrotracheal lobes or substernal extensions of the thyroid.

A careful study of each patient who complains of nervousness with repeated examinations, basal metabolic rate determinations, electrocardiograms and various other aids which we have, together with a careful study of the patient as a whole over a period of some time if necessary, enables an accurate diagnosis to be made in many cases of "nervousness" and other similar symptoms of obscure origin.

THE VAST MAJORITY of human bodies are beautiful only in the abstract. The reality is not, from the esthetic standpoint, anything to boast about. When an imperfect human body is partially clothed, anyone viewing it may, if he wishes, suffer himself to imagine perfection.

The *idea* of nudity may be highly stimulating to the imagination, but the *reality* is disillusioning.

One of the chief benefits of the nudist camp to its members is their own increasing consciousness of their physical shortcomings, and a natural attempt to correct them. A man with a paunch will, when he is clothed, often make only sporadic attempts to hold in his abdomen, or diet, to reduce it. Thrust into a nudist camp, he is keenly aware of his physical appearance at all times, and, not being able to conceal his stomach with clothing, he does the only other thing possible, he pulls it in muscularly, and sets about to reduce it by diet. The presence of the opposite sex is largely responsible for this.—*Sexology*.

CASE REPORT

A Complicated Intestinal Foreign Body

Douglas Jennings, M.D., F.A.C.S., and W. C. Hunsucker, M.D., Bennettsville, S. C.
Marlboro County General Hospital

Many types of foreign bodies have been swallowed and successfully passed from the intestinal tract without ill effects. Da Costa states that any body which can pass the esophagus is not too large to pass through the intestines. Lodgment is an accident, not an inevitable consequence—an accident which is due to the shape and size of the body. As a general rule a foreign body which can be swallowed will traverse the intestinal tract in four to 12 days. Holt recites a case in which a safetypin remained in the intestinal tract for eight months and then passed spontaneously.

The diagnosis is usually difficult. X-ray examination will aid in the diagnosis of foreign bodies that will cast a shadow. Not infrequently the parent or nurse is not sure that the child has taken the foreign body into the stomach; however, this does not console the anxious mother. Once the diagnosis is made conservative treatment should be instituted. No emetic or cathartic should be given. The diet need not be changed unless one endeavors to encrust the foreign body and thus lessen the danger of perforation. Laxatives increase peristalsis and increase the danger of impaction or perforation. An exclusive diet of mush, bread, or mashed potatoes has been suggested. Operation should not be performed until there are definite local symptoms of perforation, abscess formation or intestinal obstruction.

The following case will illustrate one of the complications of a foreign body in the intestinal tract.

A 12-year-old white boy was referred to us with the history of vague abdominal pain for one month. Soon after the onset he had some nausea and was given castor oil and magnesium sulphate by mouth which were productive of many stools, normal except for their watery character. He returned to school but the lower abdominal pain became more constant, more severe and he was nauseated most of the time. He spent the week prior to pospital admission in bed because of pain and weakness. Fever was noticed by the father about 18 days after the onset. He denied having bloody stools or passing worms.

The family history was not remarkable. The child had had the usual childhood diseases and no serious illness or accidents.

He was anemic, fairly well nourished, had temp. 98.2, p. 90, resp. 20. Systematic examination disclosed these abnormalities: Abdomen slightly distended; a well-defined, tender mass in the right lower quadrant a little lower than the usual appendiceal abscess, fairly freely movable; over the mass considerable muscle rigidity; fullness in the cul-de-sac apparently a portion of the mass described under abdominal findings; white cells 12,750—68% polys. 30% lymphs, 2% eosinophiles—hgb. 60%, reds 4..10.000

The diagnosis of appendiceal abscess was made and under avertin-ether anesthesia the abdomen was opened through a short right-rectus incision. The findings were, "A small localized abscess in the right iliac fossa containing very little pus, made up mostly of inflammatory adhesions of the structures in that vicinity." The abscess cavity was explored with the gloved finger and two Penrose rubber-covered gauze drains placed in the cavity and brought out through the incision. The incision was closed in layers about the drains. The patient was returned to bed in good condition. The second day afterward temp. was 103, but came down to 100 following an enema. On the fifth day the temp. was not over 99, the p. 84, and one drain was removed. The following day there was considerable purulent drainage with a fecal odor. On the seventh day the second drain was removed and with it some fascial slough and the skin sutures. For the next seven days there was but little drainage, this decreasing daily. On the 15th day a chip of wood with bark on one surface measuring 2½x1x.6 cm. was presenting in the incision. This was removed and beneath it were healthy granulations. The wound healed quickly by second intention with little drainage after removal of the chip. Even after removal the patient denied swallowing such an object. It was learned from his father that about one week before onset the patient helped his father clean a ditch bank and it may be possible that he swallowed such an object at this time.

Pellagra—What is the Problem

(C. D. Powdon, Epidemiologist, Ga. Dept. of Public Health, in *Jl. Ga. Med. Assn.*, March)

More information concerning the age, color, and sex distribution is to be desired. The geographical distribution of cases should be further investigated. Studies should be carried out as regards the historical, physical and clinical aspect of each case as well as the dietary regimen.

The introduction of nicotinic acid has been a godsend to pellagrins. But what about prevention?

The fight to enlighten the people, to improve the economic and social standards must continue. Balanced diets must be provided through a diversification of agriculture and a desire upon the part of the people. These things are very simple to mention but difficult to accomplish. The diet of a large element of the people is deficient in the pellagra-preventive factor, in proteins and usually in the other vitamins. If nicotinic acid becomes part of the diet of cornbread, molasses and fatback, have we prevented the other deficiencies? Until it has had long clinical use, I would hesitate to advocate its incorporation into the food substances which make up the diets of the lower classes. Substitution in the diet probably offers the best solution in the attack on this problem at the present time. There is a substance. It is cheap. It is palatable. It may easily be incorporated in the diet. It is rich in the pellagra-preventive factor and rich in proteins. *This substance is peanut flour.* It can be bought for 10c a lb. and with increased use will become cheaper. I believe that peanut flour will be of great value in prevention and a desirable adjunct in treatment.

The men in general practice are still and always will be the solid foundation for medical practice, and it is their job to see to it that this foundation remains solid, because all the other medical superstructure is built upon it.—*H. J. John.*

Equipment for a Vaginal Examination—A glove, a lubricant, a light, a speculum, swabs, slides, salt solution, a witness.—*H. J. Davis.*

Fatal poliomyelitis has lessened in [illegible] the younger ages.—U. S. P. H. S. Report.

President's Page

Tri-State Medical Association of the Carolinas and Virginia

Since the advent of hospital standardization requiring monthly meetings of the various hospital staffs, these meetings added to those of county, district, state and national societies, doctors in the active practice of medicine find little time to do anything other than see patients and attend meetings.

Most of these societies continue to function, because they are necessary in the set-up of organized medicine, regardless of how much or how little interest is shown by the members. There are, however, medical societies of which the Tri-State is an example, which depend entirely upon a voluntary membership for their existence. The growth and existence of these societies is in direct proportion to the amount of interest instilled into their members and into prospective members through their journals and programs. The regular growth of the Tri-State Medical Association of the Carolinas and Virginia since its origin is sufficient to show its value to the medical profession, principally because of its interesting and instructive programs supplied by the leading physicians and surgeons of the three states. An attractive program is the most essential and necessary step in creating interest in any society. The subject must not be ultra-scientific or vague, but it must be practical, imparting working knowledge that can be used by the members when they return home. To be of value these subjects must be presented by men of experience and recognized ability. A meetingis always well attended when such men are on a program. The Southeastern Surgical Congress is an example of a young organizaton which has rapidly grown to cover more than the Southeastern part of the United States and just because of excellent programs.

Among the members of the Tri-State Medical Association are the most prominent physicians and surgeons of these three states, several of whom enjoy a national reputation. In order to make the Tri-State programs even more attractive, I would suggest that one third of the papers be presented by such members, chosen and invited to do so through our secretary. Round table discussions of papers presented at the meetings is another excellent and interesting feature adopted by several societies.

Although our membership shows a gratifying increase each year, there are many more doctors whose names should be on our rolls. In order to encourage our present members to attend and to show non-members the value of a Tri-State membership, our programs must be of a type that no one can afford to miss. They must be irresistible.

—*A. E. BAKER*

Treatment of Vaginal Discharge in General Practice

(W. F. T. Haultain, in *Med. Press & Circular*, via *Current Med. Dig.*, March)

The treatment of purely vaginal discharges can be carried out efficiently by the general practitioner, either in his office or at the patient's home. Only the very few persistent cases require hospitalization.

No antiseptic has been found which by means of constant douching, will destroy the offending organisms and not have a similar effect on the vaginal walls.

Is there any urethral discharge as well?

A tenacious, viscid discharge is always chiefly cervical. Treat the endocervicitis with the electric cautery. An offensive discharge very often denotes constipation, and, if it be treated, then the odor disappears and frequently the discharge. Take a smear from the vagina in all doubtful cases, by means of a platinum loop if gonorrhea is suspected, but for a trichomonal infection a smear of the discharge collected on the examining finger, smeared on a slide and stained by Leishman's stain for 20 minutes and then washed off with water.

Debility may cause a white discharge with no vaginal irritation.

Mild cases: daily douches with *sour milk diluted half and half with water*. Pessaries containing lactic acid are effective in cases of discharge not profuse or discolored.

Moderate cases: the vagina is swabbed with soda bicarbonate solution, dried and painted with picric acid, 2%, dried and insufflated with an inert powder, the chief constituent of which is subgallate, daily for several days, then on alternate days, every third day, and last once a week. Usually clears up in 4 weeks.

Severe cases: With vaginal redness and vulval irritation usually purulent and frothy usually due to trichomonas. Arsenical tablets or pessaries, inserted by the patient, is the simplest treatment, provided the patient is found not to be sensitive to arsenic. The organisms tend to recur, especially after menstruation or intercourse.

Cases needing a more intensive treatment: insufflation of the dried vagina with a silver picrate powder, picragol. Picragol pessaries one daily for a week, after which a second insufflation followed by a week's treatment with pessaries.

Another method: The dried vagina is insufflated with stovarsol powder each day of the menstrual period. During the inter-menstruum, stovarsol vaginal compound tablets, one daily, are inserted into the vagina and a further insufflation is given at the next period. Both of these treatments have given satisfactory results, and should one fail, the other may be tried.

Discharges in virgins may be due to trichomonas, usually to the general condition, may be due to a congenital

(*To Page* 185)

DEPARTMENTS

UROLOGY

For this issue JOHN H. DOUGHERTY, M.D., AND A. B. GREENWOOD, M.D., Asheville, N. C.

FACTORS CONCERNED IN WATER BALANCE*

THE presentation of a paper on this subject, the subject of which is familiar to all of you has as its strong point the fact that reiteration of known principals may lead to their better usage. Hydration has such an extremely important place in all medical practice that we must be cognizant of it at all times.

The principal factors concerned in water exchange may, from point of convenience, be concidered under three heads, these being selected for their applicability to the digressions of this discussion and not for comparative importance: 1) Water exchange in the body, 2) Water excretion, 3) The supply of water to the body.

1. Water exchange in the body is controlled by the governing power of osmotic pressure. A universal characteristic of living matter is its tendency in the healthy state to maintain a uniform internal osmotic pressure. This, despite the marked variations of external environment. The principal factors involved in the maintenance of this state are: Colloid osmotic pressure, capillary blood pressure and capillary permeability. These factors display their activity and effect through membranes which it is understood exist only in a physico-chemical sense as the differentiated boundary or hypothetical space between two liquid media. In effort to explain such phenomena the Gibbs-Donnan formula has been devised. This finds its best use in inorganic reactions, the value falling quite short when its application is made to the biological exchange of media through membranes. The hazards presenting in applying the Gibbs-Donnan equilibrium to biological media may be seen in the commonly accepted method of determining the concentration of bicarbonate in a solution of blood, which is to measure the CO_2 released by addition of acid to the solution. In such case this could not possibly represent the total of CO_2 since a very large portion of this radical is combined with hemoglobin, another fraction with proteins and possibly still another with other less known combinations.

But to return to more practical considerations. The uniformity of osmotic pressure is of far greater importance than the expression of its sum-total in the internal environment. The former, plus the highly individualized cellular differentiation of the internal environment, implies the existence between media of membranes with selective permeability. Hence, the size and shape of cells are dependent upon the partial osmotic pressure of those solutes only to which the cell membranes are impermeable. A solute which does not fall into this group is glucose, which substance no matter what its concentration in a solution, is quickly distributed evenly between the water of cells and serum, hence its perfect applicability in therapeutic measures.

For point of convenience the conception may be that the body is divided into numerous compartments each containing a markedly differentiated medium. And it can be readily seen that any loss, increase, or alteration in any of these results in a pathological state. For further discussion division of these may be made into 2 groups.

1. Those with routine physiological function:
   - Interstitial fluid
   - Lymph
   - Pleural fluid
2. Those with selective function:
   - Pericardial fluid
   - Synovial fluid
   - Cerebro-spinal fluid
   - Aqueous humor of the eye.

Both groups are filtrates from arterial and venous blood and depend on a degree of filtration pressure for their compartmental appearance.

With this brief survey of the factors involved in fluid exchange in the body let us turn to the pathological state, edema. And again for reasons of facilitating this discussion a division into groups from a standpoint of the production mechanism will serve good purpose. The edematous state has principally to do with the fluid of the first group, affects the pericardial and synovial fluids of the second to some extent and the cerebro-spinal fluid and aqueous humor to a very slight degree, except in special instances.

Obstructive edema, further divided into venous and lymphatic edema, obviously results when the flow in these two systems is impeded. The abnormal state may be temporary or permanent, depending on the damage done to the obstructed channels.

The edema of cardiac decompensation in the narrow sense is very similar in its production mechanism to that due to obstruction. There are certain differences in distribution, chemical and physiological pattern and changes due to therapy that warrant distinction.

The nephritic edemas deserve segregation since the factor in their production is increased capillary permeability, usually accompanied by increased capillary blood pressure. In this case the kidney is usually at fault and focalizes the reflection of a

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

generalized vascular injury seen in a widespread systemic disease.

Malnutrition edemas, of which nephrotic edema is an example, occupy a distinctive class. They result from lowering of colloid osmotic pressure which follows the loss, failure of intake, or failure of elaboration of plasma proteins.

The other two classes of edema may be discussed together because of their comparative rarity, although their production mechanisms differ. Urticaria and angioneurotic edema are in the first group, the most important factor in their production being increased capillary permeability, possibly having an irritative or neurogenic background. Of the second, the edema accompanying myxedema is a good example and possibly has its mode of production in increased hydrostatic pressure resulting from peripheral dilatation and stasis.

It is understood, however, that all edema fluids, whatever their mode of production, must have some properties in common, since they are all derived from blood. The variation will naturally be in volume, concentration per unit volume and physiological pattern. In a series of commonly occuring edemas and serous diffusions the highest protein concentration (5.8%) was found in empyema pus, whereas the lowest (.1%) was found in the subcutaneous edema existing with nephrosis and glomerular nephritis.

2. Water excretion. In the healthy state there is adequate adjustment between ingested and excreted water, with resulting maintenance of the water content of the body at a nearly constant level. Acting to maintain this equilibrium are: fluids drunk, water content of food and that produced oxidation of food; as opposed to water of stool, urine and sweat, and water vapor from lungs and skin. Only about 150 c.c. is lost in the feces, the remainder through the kidneys, skin and lungs. The water of vaporization is constantly elaborated and is little affected by the water storage in the body; the temperature regulating mechanism demanding a constant amount of fluid for water of vaporization regardless of the supply in the patient. In deprivation of water, even for long periods of time, water of vaporization continues to appear on the surface, even though the output of urine may have long since ceased and even until dehydration results in death.

The kidneys, on the other hand, are markedly affected by the amount of water available; hence the variable specific gravity seen throughout the 24-hour period. With a good intake of water the balance between the intake and output of fluids is maintained largely by the kidneys using the surplus on hand. A small volume of high specific gravity, then, means insufficient water. The amount of body water should be sufficient to permit the kidney to excrete waste materials without forcing it to work ot its maximum capacity. Normally there must be an excreation of 35 grams of waste material in 24 hours. The kidneys must have available at least 1500 c.c. of water to perform this function adequately with minimum operating capacity. In cases of kidney pathology or of excessive loss of fluids in medical and surgical conditions, at least 3000 c.c. of water becomes necessary.

In a large group of varied surgical patients it was found that the average water of vaporization was 700 c.c. Considering this, certain practical application may be made by minimizing its loss by lightly covering post-operative patients to the point of just keeping them safely warm and not so heavily covered that vaporization is stimulated to a maximum.

3. The supply of water to the body. In the calculation to supply adequate fluid to the body, the figure for water of vaporization may be reasonably set at 2000 c.c. in 24 hours, since the loss by this route will vary greatly. Water for urine replacement may be set at 1500 c.c. The replacement of fluid lost by hemorrhage, vomitus, drainage, sputum and exudation, etc, must be accurately measured and liberally resupplied or the apparently adequate 3500 c.c. in 24 hours will prove far below the correct amount for proper hydration. When the replacing supply is inadequate we may unknowingly attribute the resulting poor urinary output to such unproved hypotheses as reflex or toxic suppression, when actually sufficient fluid has not been supplied to overcome fluid loss. Fear of causing such a hypothetical state as acute dilatation of the heart by adequate fluid replacement has no basis in fact. To complicate the situation comes the previously ill patient in a marked dehydrated state. When a state of dehydration exists, with dry tongue, sunken eyes, fever and urine insufficient to eliminate waste products and of a high specific gravity, and elevation of the blood npn. to 40 mgm. the water loss amounts to 6 per cent of the total body weight. A figure so important can not be ignored. It probably explains why children become so seriously ill with dehydration, for 6 per cent of their body weight represents an extremely large volume of fluid.

To sum up: 3500 c.c. for urine and water of vaporization, plus 500 c.c. for loss by hemorrhage, etc., and the 6 per cent of the total body weight previously lost by the dehydrated patient, the resulting fluid replacement reaches the figure of about 7000 c.c. in 24 hours—a figure which may be con-

sidered by some to be dangerously high. However, if anything like normal kidney function is to take place, fluid loss must be thoroughly calculated and adequately replaced.

In the replacement of fluids the intravenous method is doubtless the most efficient and by its use adequate replacement can be undertaken. Even the oral intake of such large amounts of fluid by the mildly ill patient would be difficult. Clyses have their place and may often have to be resorted to in children and in cases of obstructed veins etc.; however, for efficacy they can not compare with the infusion method. The most important point against their use is that for the small amount of fluid which can be replaced compared to the pain and discomfort of their use, they have very little to recommend them. The Murphy drip should be *passé*. It has been shown that absorption is poor by this route.

As to choice of solutions for this use. If only fluid and nutriment need be supplied, 5 per cent glucose in distilled water will be satisfactory. Unless it is necessary to replace electrolytes lost in vomiting, exudation etc., saline should not be used, since the resulting abnormally high electrolyte concentration produces fluid retention. If it becomes necessary to replace base, saline—or, better,Hartmann's solution, due to its sodium lactate—may be used to advantage. Most authorities say that Ringer's and Fischer's solutions have little to recommend them. They are of a complicated nature, difficult of preparation and they have no advantage over simple isotonic glucose and saline. If nutrition is particularly desired 10 per cent solution of glucose may be used without danger, and if it is necessary to reinforce, osmotic pressure transfusions or solutions of 5 to 10 per cent sucrose may be used to marked advantage. The 50 c.c. of 50 per cent glucose commonly given to produce decompression falls rather short of expectation, since it is diffused through all cells very rapidly and any decompressing effect is soon lost. Magnesium sulphate is reported by investigators to be useless and dangerous when used as a decompressing agent: enough of the 10 per cent solution to accomplish the desired decompression would probably kill the patient. It has one useful advantage in the sedative action of the magnesium ion, hence its usefulness in convulsions. If one wishes to produce decompression along with stimulation of a delayed diuresis, 50 c.c. of 50 per cent sucrose may be used to advantage.

Bibliography

Peters, J. P., Body Water. *Charles C. Thomas;* Springfield, Ill., 1935.

Peters, J. P. and Van Slyke, D.D., Quantitative Clinical Chemistry. *The Williams and Wilkins Co.*, Baltimore, 1935.

Eichelberger, L. and Hastings, A. B., *J. Bio. Chem.* 118:197-204 (1937).

Eichelberger, L. and Hastings, A. B. *J. Bio. Chem.* 118:205-218 (1937).

Maddock, W. G., *J. Urology*, 39:4-444 (1938).

Discussion

Dr. Harold Glascock, Jr., Raleigh, N. C.:

I do not believe that it is necessary for me to say again that a sufficient quantity of water in our bodies is one of the most important things we should consider. Approximately 60-90% of our body tissues are composed of water. Water makes up the greater part of each cell, and most cells are surrounded by water. Relative to the amount of water that is necessary. The average well person regulates that by his thirst, but the sick person is apt to have this automatic regulator thrown out of commission. In fever and diarrhea the loss of water is more rapid. When persons are sick we should force fluids except in some cases of edema.

Most doctors do not think that acute dilation of the heart contraindicates the free consumption of water. When we speak of osmotic pressure I heartily agree with Dr. Dougherty that magnesium sulphate intravenously is of small value. I would rather use plasma as I believe it is the more effective means of maintaining osmotic pressure and blood pressure at the same time:

Dr. J. M. Northington, Charlotte:

Last year at our meeting in Asheville I sat next to Dr. Dougherty at a meal and had an opportunity to learn of his conversational powers.—Today, at the next Tri-State meeting, I learn of his ability as an essayist. I rejoice in seeing a return to scholarship. It is not to be despised. Rugged virtues are good things; but rugged virtues, adorned, become better things.

I agree with Dr. Dougherty and emphasize his methods of presenting his ideas. If our ideas are confused our words are confused; if our words are confused our ideas are confused. The English of the King James Version and of Shakespeare will serve all the purposes of clear and forceful expression, and it better becomes the members of a profession called learned than does the slang of the street or the patter of the advertising man.

Dr. Dougherty, evidently, has learned and taken to heart the adjuration of Hamlet to the player, "Speak the speech, I pray you, as I pronounced it to you, trippingly on the tongue; but if you mouth it, as many of your players do, I had as lief the town-crier spoke my lines."

Dr. Dougherty, closing:

Dr. Glascock, thanks to you.

I want to emphasize this point: If we coolly calculate the factors involved and do what our good common sense tells us should be done before operation we find some signs and symptoms will disappear. Gross pathology and microscopic pathology may be plainly seen in dilation of the heart. I do not believe dilation of heart occurs with any frequency in this connection. The maximum figure of 7000 c.c. is extreme. Acacia is a very dangerous thing—we can do with sucrose I think. Of course blood is expensive. We might give 500 c.c. of fluid and 200 c.c. sucrose with that fluid.

I appreciate Dr. Northington's kind words.

Hoarseness of a week's duration, until proved to be caused otherwise, must be assumed to be caused by either tuberculosis, syphilis or cancer.

OBSTETRICS

For this issue W. Z. Bradford, M.D., F.A.C.S., Charlotte, N. C.

History of Previous Pregnancies

The obstetrical literature is today so filled with endocrinology, biochemistry, microscopic pathology, statistical surveys etc., that the attention of the practitioner is diverted from many practical clinical findings that are at his finger tips. Chief among these is a detailed history of previous conceptions which often reveals information whose practical value equals that of the most complete laboratory investigation. In the intelligent conduct of an obstetrical case, the past obstetrical history must be appraised in detail, whereupon it will be found of inestimable value. In obtaining this history from the expectant mother, each previous pregnancy must be analyzed in systematic fashion, the following being a typical manner of approach: Year, duration of pregnancy (*i.e.*, six-weeks abortion, seven-months premature, ten-days postmature, or full term etc.), method of delivery (spontaneous, forceps, cesarean section, breech extraction, version etc.), weight of child, condition of child (living and well, neonatal death, cause of death etc.), complications to mother (hypertension, albuminuria, postpartum hemorrhage etc.), duration of labor, perineal repair and result, puerperium (febrile, duration of confinement in bed, lactation etc.).

While the queries are many the habit of taking the history in this fashion is readily cultivated, omits no pertinent information and can be reduced to a brief time. Such histories immediately place the multipara in one of several classifications, following which her prognosis may be determined and if the history is pathological the indicated line of treatment may be immediately instituted.

Normal Obstetrical History

Mrs. G., white, age 37, para 3, gravida 4.

Past obstetrical history: 1928, full term, outlet forceps, weight 7 pounds 2 ounces, living and well, labor 15 hours, episiotomy, puerperium uncomplicated.

1931, full term, spontaneous, weight 7½ pounds, living and well, labor 8 hours, puerperium uncomplicated.

1935, full term, breech, spontaneous, weight 8 pounds, living and well, puerperium uncomplicated, extensive episiotomy and repair, labor 15 hours, moderate postpartum hemorrhage, slow return to normal strength.

This history indicates a normal reproductive mechanism, an ample pelvis, probably a normal vascular bed without potential toxemia, and, in general, an excellent obstetrical prognosis.

Disproportion History

Mary G., colored, age 21, para 2, gravida 3.

Past obstetrical history: 1934, full term, weight 7½ pounds, premature rupture of the membranes, instrumental delivery, labor 36 hours, stillbirth, episiotomy and repair, pyelitis in puerperium, prolonged morbidity and slow recovery.

1938, full term, breech presentation, admitted to hospital following rupture of membranes, having been in labor 12 hours, cervix completely dilated and previous vaginal examination, extraction, difficult aftercoming head, Piper forceps. Infant: weight 6½ pounds, had definite signs of intracranial hemorrhage but survived. Episiotomy and repair, afebrile convalescence.

This history is typical of disproportion, the first labor being suggestive of an occiput-posterior and the breech presentation in the second pregnancy being also suggestive of pelvic deformity. On the basis of this history the physician is justified in obtaining x-ray pelvimetry and possibly consultation. If these are not available he is forewarned and hence forearmed in the conduct of this, the third, labor. In the presence of a moderate degree of pelvic contraction, induction of labor by premature rupture of the membranes, possibly ten days to two weeks before term, might be the procedure of choice. If pregnancy is allowed to proceed to term, a closely supervised trial labor is indicated and failure of early engagement or slow progress, with this history, would be ample grounds for a low cervical cesarean section early in labor.

Toxemia History

Mrs. S., age 36, para 2, gravida 3.

Past obstetrical history: 1936, 8½ months, induction of labor for pre-eclamptic toxemia, one convulsion in labor, instrumental delivery, labor 24 hours, neonatal death 24 hours postpartum, uneventful convalescence. Blood pressure in puerperium unknown.

1938, 4½ months, spontaneous miscarriage, hypertension and albuminuria, puerperium uncomplicated, residual hypertension 150/100 for many months.

The history of eclampsia, followed in a later pregnancy by a spontaneous miscarriage with residual hypertension, is indicative of residual vascular injury. Such investigations as will reveal the presence of arteriolar damage should be made at the earliest moment in the present pregnancy. An eye-ground examination, a Mosenthal or urea clearance test, the response of the heart to effort and possibly an electrocardiogram and medical consultation should be considered. Therapeutic abortion is indicated if vascular pathology of even a moderate degree is demonstrable at the onset of this pregnancy.

In the absence of any residual vascular injury, the history is a warning of the probability of an inevitable development of hypertension at a later period, and should serve as a justification for careful regimen throughout the present pregnancy. Close supervision is indicated, and the fact that pregnancy is the best known test of potential vascular disease must be remembered. Close observation might make it possible to carry this pregnancy to viability when induction of labor could be employed.

The author recently made a survey of over 500 maternal deaths from toxemia of pregnancy in North Carolina and several striking facts were ascertained concerning the multiparae in this group. Of 344 maternal deaths from eclampsia, 44% occurred in multiparae. The oft-repeated statement that this is a disease of primiparae is fallacious and has undoubtedly created a false sense of security in the care of toxic multiparae. Two out of five of the maternal fatalities in this group of multiparae gave a definite history of toxemia in a previous pregnancy. Doubtless this figure would

have been higher with more complete and accurate histories, but it confirms the fact that eclampsia is often recurrent and the history of previous toxemia should serve as a profound warning to the attending physician. In 171 maternal deaths from late pregnancy toxemia without convulsions in North Carolina, 106 were multiparae—51 (48%) of these multiparae with a history of toxemia in a previous pregnancy. When the inadequacy of prenatal care and the lack of obstetrical history of these patients are considered, it is quite probable that even a higher percentage had toxemia in a previous pregnancy.

In no obstetrical complication is the past obstetrical history of more moment and of greater prognostic value than in toxemia. The duration of hypertension prior to the termination of pregnancy, the degree and duration of an elevated diastolic blood pressure following the termination of pregnancy and the course of subsequent pregnancies combine to give prognostic information upon which active surgical intervention may be justified. The incidence of operative interference upon the grave toxemias of pregnancy has been condemned repeatedly; but the other extreme, namely, the policy of *laissez faire,* or inactivity, in the presence of vascular renal disease, accompained by a bad toxemia history, is a much greater factor in maternal mortality in North Carolina.

Endocrine History

Mrs. S., white, age 25, para 0, gravida 3.

Jan., 1937, 6 weeks spontaneous abortion, cause unknown, no complications, uneventful convalescence. August, 1937, three months spontaneous abortion, dark discharge for ten days prior to onset of bleeding, cause unknown, curettage necessary, no complications.

The history of habitual abortion is typical of a clinical entity which may be subject to wide variations. Such histories demand an immediate endocrine study and a definite line of therapy prior to the onset of the next pregnancy. If pregnancy has already occurred no time must be lost in initiating proper measures. Too often in such patients proper treatment is not commenced until after bleeding has again occurred or the ovum has been blighted, and a futile effort is made to lock the stable after the horse has been stolen. While primary defects of germ plasm are occasionally encountered, the more common cause is a functional glandular deficiency. Thyroid deficiency is frequently encountered in such cases. Hypothyrodism is not always revealed by basal metabolism determinations and the metabolism should serve only as a guide to the amount of thyroid. The woman who aborts habitually should be given thyroid extract (desiccated thyroid gland) until she shows evidence of excessive thyroid medication, whereupon the dosage be reduced to the maximum of toleration. A low metabolic rate justifies the initial dosage of from two to three grains daily, and in the presence of a normal metabolism more cautious administration, possibly commencing with a half-grain daily.

Vitamin E, wheat germ oil, should be administered, preferably two perles daily, reducing to one perle daily after the fourth month. Many obstetricians have been impressed by the value of the pregnancy urine extracts (antruitrin S, pregnyl, antophysin etc.), 100 to 200 rat units, two or three times weekly until after the fourth month. In our hands, supplementing this treatment with the one mgm. doses of corpus luteum (proluton, Schering) in oil every three to five days has accomplished most satisfactory results. The presence of any uterine contraction or the sensation of impending menstruation in such cases requires immediate administration of corpus luteum. Many patients experience cessation of the sensation of uterine irritability immediately following this injection. In all such cases, complete cessation of sexual relations should be urged.

Syphilis, Habitual Fetal Death etc.

Time will not permit the detailed analysis of the obstetrical histories of the syphilitics, except to state that the history of the birth of a macerated fetus always demands thorough investigation of the possible presence of the disease.

Other clinical entities discovered by complete obstetrical histories include habitual fetal death and the history of large children with dystocia. Both of these may be avoided by early induction of labor, and in the latter a possibility of diabetes should be borne in mind.

A long interval between the last pregnancy and the present conception detracts from the value of the past obstetrical history. The history of a number of normal pregnancies and deliveries occurring several years before the present conception which is late in the reproductive life of the patient should never lull the obstetrician into a false sense of security. Ofttimes a larger infant develops with each succeeding pregnancy, resulting in an extreme disproportion late in the mother's reproductive life, when previous deliveries have been normal.

In summary, the obstetrical history is a much neglected but valuable method of recognition and prevention of obstetrical pathology. This information is at the finger tips of every physician who will take the time to ask and listen.

421 Professional Bldg.

GENERAL PRACTICE

WINGATE M. JOHNSON, M.D., *Editor*, Winston-Salem, N. C

A Close-up View of Christian Science

RECENTLY I have had an interesting experience. A visitor in our home, who is a full-fledged Christian Scientist, with misionary zeal, did her best to indoctrinate the whole family. Our annual epidemic of influenza which was raging then—and which she designated as "a great deal of error"—left me little time to be converted. It must be admitted that it was rather an intriguing thought, that it was absolutely unnecessary to be sick. When our young son had been exposed to measles, she calmly told my wife that it wasn't at all necessary for him to have it. Sure enough, he didn't. His immunity might have seemed to depend upon her healing aura, had he not previously had a much more prolonged exposure and escaped.

One of my patients, who has been kept in bed for two years by severe coronary disease, is also a neighbor and good friend. When my wife was returning from a visit to him, she told our visitor of his patience under his enforced idleness—and was told that he did not have to be sick at all, but could, by the help of Christian Science, resume his normal activity. This reminded me of an experience I had a few years ago, when a spinster, after two cerebral hemorrhages, embraced Mrs. Eddy's faith, and dismissed me. I was told that she began improving immediately thereafter, and was soon quite well. To this I replied that I was quite willing for Christian Science to have the credit for her improvement, provided it would also be responsible for her future welfare. Three months later she died—apparently of improvement, as no further illness was ever admitted.

Our visitor reported the marvelous cure of a young married man who had allowed appendicitis to progress to the point of peritonitis—a most grevious error! The surgeon was not over-optimistic in his prognosis, but the wife sent a telegram to Kansas City, the headquarters of Unity, asking for the united prayers of the office force (at, I was unkind enough to surmise, so much a prayer). Immediately a feeling of deep peace came upon her, and she assured her mother-in-law, the patient's mother, that Henry would get well—she knew that he would. And sure enough he did! Waiving the question of the part the surgeon played, I simply had to ask, innocently, whether her answer to prayer had come directly from Heaven, or by way of Kansas City. The reply was that it was a question of mathematics—the more people united in prayer for an object, the more effective the prayer. But when I opined that if the young wife had been stranded in a strange city, without the price of a telegram to Kansas City, it would have been just too bad, the subject was abruptly changed.

The best story of faith healing I've heard in some time was told me by Gerald Johnson. A friend of his family, while on a visit to Los Angeles, was taken by her hostess to a faith-healing demonstration in the temple of Aimee Semple McPherson. To their great surprise, the maid, who had a free afternoon and evening, was one of the first to parade up the aisle on crutches. After Mrs. McPherson's hocus pocus, she threw away the crutches and walked vigorously off the platform. The next day, her employer expressed surprise at seeing her at such a performance, since she was not known to be a cripple. "Can you think of an easier way to earn five dollars?" was the reply.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., F.A.C.S., *Editor*
Asheville, N. C.

Limitations in Preventive Medicine

SINCE preventive medicine is so largely in the saddle at present and since so many biological products have been devised for eliminating the disease as well as curing it, it is well to have a paper by such an authority as Dr. Henry A. Christian, Professor of Medicine at Harvard University, entitled: Some Limitations in Preventive Medicine.[1]

"Diseases in man can be divided into those that are preventable and those that are not preventable; we may have methods of decreasing incidence of some of the latter and yet cannot prevent them; strictly speaking they are not preventable diseases. Curability or satisfactory methods of treatment are not regarded as an integral part of prevention, although they may be important contributory factors of prevention."

He further adds that it is difficult to estimate with any degree of accuracy the proportion of preventive diseases that are seen by practitioners, as apart from the contagious diseases of childhood and syphilis they do not make up any large proportion of general practice. The diseases which play a major part in bringing about the demise of the old, such as heart disease, cancer, nephritis and cerebral hemorrhage, are non-preventable diseases. However, while preventive medicine does have an effect on the soil in which the degenerative diseases thrive, as preventive medicine prevents there will be less of preventable disease and more of non-preventable disease.

"In 1800 life expectancy is supposed to have been between 25 and 35 years; in 1815 it was calculated to be 38.7 years; in 1900 each new born infant had a life expectancy of a little less than 50 years; now the life expectancy at birth has passed 60 years; 61.2 years in 1933. If mortality by age groups is analyzed, it will be found that this life expectancy increase has come almost entirely as the result of preventive medicine effective on the young."

Preventive medicine, in short, as it succeeds is

1. March issue of *Annals of Internal Medicine*.

increasing the number of older people in our population. As Dr. Christian humorously puts it: "Preventive medicine seems destined to decrease the importance of pediatrics and to increase the importance of geriatrics; the younger are becoming healthier, while the older increase in relative numbers only to suffer, perhaps to suffer more frequently and relatively earlier, the diseases incident to, in fact unavoidable in, the older decades of life." The life span does not seem to mave been increased.

"However, with more people becoming older, and old people not living any longer than before, as the results of betterment of methods of preventive medicine more individuals may be expected to develop degenerative disease and the younger ones of this group seemingly to become increasingly susceptible to, and possibly live longer with, degenerative diseases. The result of this will be that physicians will have more and more work to do, chiefly in taking care of degenerative disease in the old, *i.e.,* in practicing geriatrics."

Dr. Christian shows an interesting table demonstrating the shift in relative importance of the chief causes of death from period to period:

1900
1. Tuberculosis (all forms)
2. Pneumonia (all forms)
3. Diarrhea and enteritis
4. Heart disease
5. Congenital malformations and diseases of early infancy
6. Nephritis
7. External causes
8. Cerebral hemorrhage and softening
9. Cancer and other malignant tumors
10. Diphtheria
11. Typhoid and paratyphoid
12. Influenza
13. Cirrhosis of liver
14. Measles
15. Hernia and intestinal obstruction
16. Whooping cough
17. Suicide
18. Appendicitis
19. Diabetes mellitus
20. Malaria
21.
22.
23. Syphilis
24.
25.

1935
1. Heart disease
2. Cancer and other malignant tumors
3. Pneumonia (all forms)
4. Nephritis
5. Cerebral hemorrhage and softening
6. Tuberculosis (all forms)
7. External causes
8. Congenital malformations and diseases of early infancy
9. Automobile accidents
10. Diabetes mellitus
11. Influenza
12. Suicide
13. Diarrhea and enteritis
14. Appendicitis
15. Hernia and intestinal obstruction
16. Syphilis
17. Homicide
18. Cirrhosis of liver
19. Other puerperal causes
20. Puerperal septicemia
21. Whooping cough
22. Malaria
23. Diphtheria
24. Measles
25. Typhoid and paratyphoid

Preventive medicine is very limited in its effect on Bright's disease; yet Bright's disease ranks fourth among causes of death. Preventive medicine has relatively little to offer in chronic cardiac disease. In earlier life, up to about forty, rheumatic fever was the cause of most cases of chronic heart disease; and little or nothing is to be offered in the way of prevention. Past forty, chronic non-valvular disease increasingly dominates the picture, associated with or as a sequence to hypertension. Here, too, preventive medicine has little to offer. It is to be hoped that as a result of the more intense anti-syphilis crusade a diminution in syphilitic heart disease will be evident in ten or fifteen years. As to prevention of cerebral hemorrhage we are wellnigh helpless.

"In malignant tumors of course, as yet, we have no effective preventive measures and cannot expect to have any in the present state of our knowledge. . . All available evidence seems to show that malignant tumors are not increasing in actual incidence beyond the fact that, as more people live into the age of their maximal occurrence, more people will develop them until such time as some means of prevention is discovered.

Pneumonia remains, as yet, a non-preventable disease; its incidence seems to be unchanging from decade to decade in all parts of the country. So far newer methods of treatment have not been effective enough or applicable generally enough to cause any apparent real decrease in mortality from pneumonia."

Dr. Christian quotes from Twenty-five Years of Health Progress of the Metropolitan Life Insurance Company, which shows that only two diseases seem to be increasing definitely as causes of death among their 17,000,000 insured individuals. These are diabetes mellitus and appendicitis, of whose effective therapy we know so much; and Dr. Christian adds that he has no explanation to offer as to why this should be.

Another suggestive theory in connection with preventive medicine is quoted in toto:

"The occurrence of numerous infectious diseases, especially the contagious diseases of childhood, creates a resistance, which possibly continues into the next generation. Certainly mild attacks prevent subsequent and possibly more severe attacks. Communities, not so protected, suffer increased incidence and severity with increased mortality, when these infectious diseases do appear. In the great war soldiers from urban centers were more resistant than those from country districts to measles, for example, in which the mortality became very high. Records show that the introduction of one of these contagious diseases

into countries in which they had not occurred previously would cause very great mortality. This suggests that, if preventive medicine completely conquers these diseases, and they disappear as a result, a great danger of their reappearance in epidemic form with high mortality might be expected. This is a possible danger of prevention by isolation as contrasted to prevention by increasing resistance. It raises the thought, too, that if a given disease, say diphtheria, is eradicated by protective measures, such as the use of toxin-antitoxin or toxoid, will it be possible, when the disease no longer is occurring, to persuade people to continue these protective measures, or will they become careless and soon an unprotected generation grows up to become the soil for spread of a malignant type of disease? Experience with vaccination against smallpox makes this seem definitely a possibility. Perhaps complete success in prevention is undesirable for those diseases in which a very considerable resistance under present conditions of occurrence is present. Certainly many of man's experiments, intended or unintended, have upset biological balances. The introduction into the United States of such pests as the English sparrow, the starling, the chestnut blight, the boll weevil, the elm tree disease etc., suggests this possibility. Perhaps a very complete success of preventive medicine may not be a complete blessing."

This paper is thought-provoking, showing as it does the philosophic reasoning of one of the master minds of medicine of our day and forcing us to realize some rather unpleasant things which, however, are so true that it would be the height of folly to blind ourselves to their existence.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Trichinosis

Zenker of Dresden, in 1860, proved that *Trichina spiralis* was not harmless as had previously been supposed, but might cause epidemics of a disease already described by Sir James Paget, in which there were found encysted masses in the voluntary muscle fibers. The trichina is normally, according to DaCosta, a parasite of the rat. Dr. Joseph Leidy discovered the trichina in pork and we now know that man becomes infested through the gastrointestinal tract from eating insufficiently cooked pork.

Infestation may come from eating fresh pork, smoked pork or boiled ham which has not been subjected to enough heat in all its parts, to kill all the parasites. The practice of grinding some pork with the beef to make a better hamburger is general. When hamburgers are eaten rare, a not uncommon practice, infestation may readily occur from the pork content. The pig, a domesticated scavenger which is fed the garbage from the kitchen, must be more generally infested than has been thought, for recent investigation shows an alarming incidence of trichinosis in the human.

Based on a special study of a series of 100 consecutive autopsies in each city it has been estimated that in Cleveland 36% of the people have trichinosis; in Washington, 24.6%; in Minneapolis and Rochester, 31.5%; in San Francisco, 43%; and in Boston, 49.7%. It is estimated that the average of infestation of the urban population of the United States is 37%, with an estimated total of 48,000,000 cases of trichinosis in this country!

If the real incidence of infestation approaches the estimated incidence an alarming situation prevails which should be overcome by educating the people as to the danger of eating rare pork. Public Health Departments should enforce laws to prevent imperfectly cooked pork being served in public eating houses. It would seem that more careful inspection of meat in slaughter houses might result in the recognition and condemnation of most infested pork before it reaches the consumer, although in pork the parasite often lacks the calcified capsule and escapes notice.

When imperfectly cooked pork is eaten the parasite is liberated in the stomach by digestion of the capsule. Many embryos are given off within a week. Passing through the wall of the intestine and entering the lymph spaces and the circulation, they reach the striated muscle fibers, where they become encysted in about six weeks, calcareous material being deposited in the inflammatory exudate which surrounds them. In these capsules the trichinae may remain alive indefinitely or may die and the entire mass become calcified. The cervical and the intercostal muscles and the diaphragm are most frequently involved.

The symptoms are those of gastrointestinal irritation, of diffuse colicy pain in the abdomen, followed after several days by soreness and pain in the muscles of the back and extremities. There is moderate fever with leucocytosis and marked eosinophilia.

In the early stages the diagnosis may be made by finding the parasites in the stools, later they may be found by microscopical examination in an autopsy specimen of striated muscle.

Prognosis depends upon the resistance of the patient and the severity of infestation. Hare says the mortality may be 70%. Recovery may take place in two weeks but may be delayed for months. Mild cases may not be suspected.

Treatment is symptomatic and has little effect on the parasite after it has entered the muscles.

Although trichinosis is briefly discussed in all surgical textbooks its main interest to the surgeon is in the diagnosis. It should be considered as a possible cause of abdominal pain and later it has to be differentiated from muscular rheumatism.

Reference

Trichinosis in the United States, *Jour. A.M.A.* Mch. 18.

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor,* Greensboro, N. C.

Carry Your Own Message

If you have something to sell, sell it; if you have something to tell, tell it; if you want something, ask for it, for it is certain that no one else will do these things for you.

As the busy world moves around us each individual or group has its special duties or obligatioons. In the hospital world the duties and obligations of operating a home for the sick falls upon the doctors and nurses in any given community. It is not enough, however, for them to work their hands and their minds without soliciting sympathy, coöperation and assistance from those who are served by the institution they represent.

If each hospital personnel member, from the superintendent down to the maids, were as enthusiastic over his or her work and success as over many of the frivolous things of life, there is no telling to what extent coöperation and assistance would be forthcoming from the lay public. For instance, if the superintendent is a man with the duties of business manager, he, no doubt, has a brighter twinkle in his eye or is more animated in voice when he is talking about horse racing, playing golf or the knockouts of the Brown Bomber than he is when he is discussing the hopes, aims and aspirations of the institution which he represents.

If the superintendent happens to be a woman then she becomes all excited over a new dress, a new hat, or, perhaps a new boy friend, and during the discussion of these subjects she becomes an entirely new individual. She is attractive, full of enthusiasm; but should you begin to discuss the ways and means of polishing the floor more quickly with less wax, or should you want an inventory of the linen in the hospital, or again, if you want to know the percentage of nurse day service in comparison with patients served, immediately enthusiasm changes to despair, energy changes to fatigue, and attractiveness is all gone.

The cooks, orderlies and maids are enthusiastic about playing the numbers, hitting the jack pot, and the revival meeting going on in their neighborhood; but when it comes to serving breakfast, dusting a room or dressing a patient their enthusiasm dies a natural death.

Taking into account our assets and liabilities as human beings we must realize that, for success to attend our efforts, we must not put first things last, nor delegate our labors and responsibilities to another. The superintendent of a hospital should be the superintendent day in and day out. He or she should become so enthusiastic in discussing the work of a hospital that his or her very soul shines out in sincerity and loyalty to the cause they represent.

It is not fair to expect the trustees to put out all of the publicity in favor of the institution that the superintendent is making a livelihood from. The superintendent should carry the message out into the world among the rich and poor, the educated and ignorant, the sick and well, that the institution he represents is rendering a service which cannot be compared with the service of any other institution in that community. This is his message and he should carry it forward. His still tongue never promotes progress.

The supervisors on the halls move in and out in their social strata and have an opportunity to speak with authority and influence about the service rendered by the hospital; but how many of them enjoy even mentioning this subject when they are off duty? I contend that the institution has a right to expect from these supervisors that they carry a message to the public of the great service being rendered by their hospital.

Last, but not least, the maids and orderlies have a message to carry; a message of good cheer, a message of recovery of patients, a message of kindness portrayed by all of the personnel in the hospital where they work—a message sometimes through a smile, extra courtesy and politeness. Yea, their very souls can be thrown into their work to such an extent that they become a part of the institution and the institution would suffer were they not part of it.

There should be no such thing as a big I and a little you in the personnel of a hospital. From the highest to the lowest and from the wisest to the most ignorant each has a message of his own to carry wherever he goes and into whatever social circle he finds himself.

I would not have you gain the impression that I am by any means condemning and belittling the services of any of the hospital employees. On the other hand *much* of the *sin of omission* is due to the lack of the proper training and proper discipline on the part of the leaders in the profession and their coworkers. It is my opinion that loyalty and enthusiasm are the most neglected subjects in the training of the hospital personnel. It behooves those of us, therefore, who are running institutions to daily drill into the minds and hearts of the personnel of our institutions the great need for enthusiasm and loyalty, and further to try to impress upon them that they are not working for a salary, that their call to serve in this life is not *based* upon a *weekly envelope* or a *monthly check*

We should help them to realize the things that they are grinding their lives out for are so far superior to the almighty dollar that a comparison would be impossible.

The call to serve sick mankind came with the Master when He was sent to redeem the world, and it is still a part of redemption, and should be so considered by those who work in hospitals. We are not mercenary. We should not be worldly-minded but should receive glory and satisfaction in carrying a message of love and service as rendered through the hospitals of our country.

TUBERCULOSIS

P. P. McCain, M. D., *Editor*, Sanatorium, N. C.

The Value of the Tuberculin Test

Within recent years articles have appeared in the literature which are causing some doubt and confusion in the minds of some tuberculosis workers as to the value of the tuberculin test. Several authors have reported that many individuals with negative tuberculin reactions show densities in their x-ray films which are generally considered as typical of calcified tuberculous lesions. In the January 1939 issue of the *U. S. Public Health Bulletin*, Lumsden, Dearing and Brown, in a study of certain groups, report a lack of correlation between the tuberculin tests and the x-ray findings and in the results of the tests made on the same individuals with different preparations of tuberculin. McNeely, of the Public Health Service, last year at the meeting of the National Tuberculosis Association reported finding many individuals showing calcified lesions and some with lesions supposed to be clinically significant who had negative tuberculin tests in the study of a group at Hagerstown, Maryland.

Most authorities are now of the opinion that a positive tuberculin test indicates the presence somewhere in the body of live tubercle bacilli. Several years ago Krause reported cases of proved clinical tuberculosis in which, as improvement was made, the tuberculin test became less pronounced; and when the lesions became calcified the tuberculin test became entirely negative. From a practical standpoint, therefore, the test is all the more valuable, since it is negative in individuals with obsolete lesions, and since a positive reaction indicates the possibility of a clinically significant lesion and the need of further study.

The percentage of patients showing calcified lung lesions on x-ray examination is so high in some sections that some authorities feel that the lesions may be due to some agent other than the tubercle bacillus. The Research Committee of the National Tuberculosis Association is planning to make an investigation of this phase of the subject.

The lesions considered of clinical significance seen in x-ray films of persons showing a negative tuberculin test are almost surely due to some non-tuberculous condition, such as pneumonitis, bronchial pneumonia or bronchiectasis. Such lesions oftentimes cast shadows on the x-ray film which strongly simulate tuberculosis. If such densities disappear in a few days or weeks, the lesions are unquestionably non-tuberculous. In any event x-ray densities indicating clinically significant lesions in persons with negative tuberculin tests would need to be proved to be tuberculous by other procedures before they could be considered as such. It is often necessary to make a series of films and to repeat the tuberculin test. In questionable cases it is needful to examine the stomach contents for tubercle bacilli and to use cultures and animal inoculations in order to establish the diagnosis.

Allergy usually appears within three weeks after infection with tubercle bacilli. McPhedran showed several years ago that occasionally the reaction is delayed and that densities due to inflammatory tuberculous lesions may be seen before allergy appears. It is also generally known, too, that for a few weeks following debilitating diseases, such as influenza, measles et cetera, allergy may be suspended; and that patients desperately sick with tuberculosis may have such resistance that they will not react even to large doses of tuberculin. In the latter instances it is, however, usually easy to establish the diagnosis by other means.

Whenever a patient, who is suspected of having tuberculosis on account of symptoms or history of exposure, fails to react to the tuberculin test it is advisable to check on the tuberculin used. The tuberculin should be a preparation from a reliable manufacturer which has been carefully standardized, freshly diluted and stored in a refrigerator. While P.P.D. is doubtless the best preparatioon on the market, it is rather expensive, and the Old Tuberculin distributed by the best manufacturers is usually satisfactory.

In a wide experience extending over 27 years the writer is thoroughly convinced of the value of the tuberculin test. A positive tuberculin test indicates existing tuberculous infection, and either a fluoroscopic examination by an experienced fluoroscopist or x-ray chest films should be made to determine whether or not there is any tuberculosis present. If the tuberculin test is negative, except in rare instances, as noted above, tuberculosis and existing tuberculous infection can be ruled out. It is a good procedure to give the tuberculin test in all suspected cases of tuberculosis unless tubercle bacilli are found in the sputum. Early tuberculosis

is oftentimes not accompanied with clinical symptoms and it is often difficult to get patients with early disease, who look and feel perfectly well, to take the rest cure as they should. A positive tuberculin test is often the only concrete evidence to the patient that his condition is not normal, and will oftentimes make him much more coöperative in efforts to restore him to health. The administration and the interpretation of the tuberculin test are simple, and the test should be used extensively by all practicing physicians. The Extension Department of the N. C. Sanatorium will be glad to furnish tuberculin free with directions for its use to any physician in North Carolina.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Memories

Before entering pediatrics I enjoyed six years of general practice in a small industrial country hamlet. Today I saw a girl in my office whom I delivered 12 years ago. While taking her history I was struck by the vividness of my memory of certain features pertaining to her delivery.

Prior to her birth the family consisted of the father and mother and three siblings. They lived in a two-room cabin stuck on the side of a mountain. It was a crude affair of unpainted boards and possessing none of the modern conveniences. Water was procured from a mountain stream, illumination came from a single oil lamp and heat from the cook stove. The pigs were not exactly kept under the bed but were near at hand as evidenced by their complaints and odors.

The father was a millhand as was the mother whenever she wasn't "too much pregnant." How they handled the economics of life was always a mystery to me. When this child left my office today I told my secretary that there truly was a child in whom I had a financial interest as her father had never paid me for her delivery.

Her mother's labor pains began early on a hot and sultry afternoon. The home was too hard to reach, leave and return later; so I decided to stay on the job, fight the flies, listen to the pigs squeal and hope for an early delivery of the baby—then of myself from the premises.

Labor was progressing slowly and I had nothing to do but sit and think. I remembered having read somewhere that pituitrin could be used by topical application to the nasal mucous membranes rather than by hypo. I still recall that mother lying on her back in the throes of labor with two wooden applicators sticking out of her nose when her husband came home from work.

Anyway, the baby came, whether its birth was hastened by the new technique of giving pituitrin or not, I do not recall. However it soon got around in the community that the young doctor had "a new way of bringing babies into the world." The fearlessness of youth—it never occured to me what the consequences might have been had the baby died.

But she didn't die as attested by her presence 12 years later in my office to be treated for "she wont grow and she's mean as hell."

PUBLIC HEALTH

N. Thomas Ennett, M.D., Health Officer, Greenville, N. C., *Editor*

The Indigent Sick

The agitation for better medical care for the indigent sick is bound to lead to some definite plan. If organized medicine does not work out a plan then the lay public or the politicians will work out a plan.

We believe it is generally conceded that the cost of the medical care for the indigent should be met out of tax money. This tax money may be local, state, or national or a combination of these.

Since most of the medical problems of the nation are found in the rural population we offer a plan which we think suitable for rural areas but we believe that, with certain modifications, it could be adapted to the urban population.

Here are the essential features:

1. The local medical society adopts a schedule of fees. This schedule is approved by the Board of Commissioners—the appropriating body.
2. The County Welfare Officer certifies those eligible for free treatment. Emergency treatment may be given without certification.
3. Patient has the choice of physicians in his community.
4. Bills are paid by the County Treasurer.
5. The Local medical society appoints a committee to sit monthly with the Board of Commissioners in an advisory capacity.

By this plan the burden of the medical care of the indigent sick is shifted from the shoulders of the private physician to the public—where it belongs.

Vaginal Discharge

(From Page 174)

cervical erosion, the cauterization of which will cause immediate cessation of the discharge. A hymen which almost obliterates the introitus may be a cause. The cause of senile vaginitis may be the trichomonas, but is usually due to a decrease of estrin secretion. Estrin, 50,000 I.B.U. twice weekly will nearly always cure. Carcinoma may be present.

THERAPEUTICS

J. Fred Nash, M.D., *Editor*, St. Pauls, N. C.

Osmos for Cervicitis

(H. L. Kleine, St. Louis, in *Jl. Mo. State Med. Asso.*, April)

Osmos is a soft paste consisting of 58% magnesium sulphate, which in turn contains the sulphate of tetra-ethyl-diamino-triphenyl methane (brilliant green) in a water-soluble base.

The 100 cases treated were chosen with some care. 60 were simple cervicitis with infection more or less limited to the surface of the cervix, erosion or irritation and redness, most of them with discharge. They were classified as acute nonspecific and chronic cervicitis. The latter were subdivided into nonpregnant, antepartum and postpartum. The only medication used in these 60 cases was osmos. No douches of any kind. The other 40 cases showed deeper involvement of the cervix and were cauterized before the osmos was applied.

Cotton tampons were used in all cases to apply the osmos to the cervix. These tampons can be made easily by the physician or his office ossistant.

The patient in the lithotomy position, a careful bimanual examination made, a speculum inserted and the cervix cleaned, tampon is slightly broadened or hollowed at one end and the amount of osmos which will generously cover the end of a wooden tongue depressor is deposited thereon. The tampon is grasped at the other end with a uterine dressing forceps, slipped through the speculum and held snugly against the cervix while the speculum is removed The string attached to the tampon should protrude an inch or two from the vagina.

The patient is instructed to remove the tampon by simple traction on the string in not less than 24, or more than 48 hours These patients were treated once or twice a week. More frequent applications should shorten the course of treatment

. A case was considered cured when the discharge stopped, when the mucous membrane covering the cervix returned to normal and when the vagina tested acid to nitrozine paper.

The osmos treatment was especially satisfactory in pregnant, extremely sensitive and nervous individuals.

Some of the patients removed the tampon after 24 or 36 hours because the tampon had become saturated from absorbed secretions and tissue fluids. In these cases an extra dry tampon was inserted.

Osmos was not tried in any case of acute gonorrheal cervicitis as no cases were available at the time. However there is no contraindication to its use

Accuracy in Eye Examination

(L. G. Dunlap, Anaconda, Montana, in *Jl.-Lancet*, March)

An accurate refraction and prescription of glasses can be made for a child of 18 months. Operating on cross-eyes can and should be done at the age of 3. It is often necessary to occlude the seeing of a child before the age of 7 in order to make that child use the poorer eye, because if the vision is not developed before the age of 7, it is never developed.

Detailed study brings out hidden imbalances of the extra-ocular muscles, and, perhaps, discovers a low-grade or beginning glaucoma, or increased intracranial pressure.

Admissions to the Five State Hospitals in Virginia for the fiscal year closing June 30th, 1938, were 5,134, which is 183 less than for the preceding year. The average annual cost for the care of a patient was $157.87.

Abram's Children

"Says Prof. Maury: 'There is a river in the ocean. In the severest droughts it never fails, and in the mightiest floods it never overflows. The Gulf of Mexico is its fountain, and its mouth is in the Arctic seas. It is the Gulf Stream. There is in the world no other such majestic flow of waters. Its current is more rapid than the Mississippi or the Amazon, and its volume more than a thousand times greater. Its waters, as far out from the Gulf as the Carolina coasts, are of an indigo blue; they are so distinctly marked that their line of junction with the common sea-water may be traced by the eye. Often one-half of a vessel may be perceived floating in Gulf stream water, while the other half is in common water of the sea, so sharp is the line and such the want of affinity between those waters; and such too the reluctance, so to speak, on the part of those of the Gulf Stream to mingle with the common water of the sea.

This curious phenomenon in the physical world has its counterpart in the moral. There is a lonely river in the midst of the ocean of mankind. The mightiest floods of human temptation have never caused it to overflow and the fiercest fires of human cruelty, though seven times heated in the furnace of religious bigotry, have never caused it to dry up, although its waves for two thousand years have rolled crimson with the blood of its martyrs. Its fountain is in the grey dawn of the world's history, and its mouth is somewhere in the shadows of eternity. It too refuses to mingle with the surrounding waves, and the line which divides its restless billows from the common waters of humanity is also plainly visible to the eye. It is the Jewish race.

'The Jew is beyond doubt the most remarkable man of this world—past or present. Of all the stories of the sons of men, there is none so wild, so wonderful, so full of extreme mutation, so replete with suffering and horror, so abounding in extraordinary providences, so overflowing with scenic romance. There is no man who approaches him in the extent and character of the influence which he has exercised over the human family. His history is the history of our civilization and progress in this world, and our faith and hope in that which is to come. From him have we derived the form and pattern of all that is excellent on earth or in heaven. If, as DeQuincey says, the Roman Emperors, as the great accountants for the happiness of more men and men more cultivated than ever before, were entrusted to the motions of a single will, had a special, singular and mysterious relation to the secret councils of heaven —thrice truly may it be said of the Jew. Pales-

tine, his home, was the central chamber of God's administration. He was at once the grand usher to these glorious courts, the repository of the councils of the Almighty and the envoy of the divine mandates to the consciences of men. He was the priest and faith-giver to mankind, and as such, in spite of the jibe and jeer, he must ever be considered as occupying a peculiar and sacred relation to all other peoples of this world. Even now, though the Jews have long since ceased to exist as a consolidated nation, inhabiting a common country, and for eighteen hundred years have been scattered far and near over the wide earth, their strange customs, their distinct features, personal peculiarities and their scattered unity, make them still a wonder and an astonishment.

'Though dead as a nation—as we speak of nations—they yet live. Their ideas fill the world and move the wheels of its progress, even as the sun, when he sinks behind the western hills, yet fills the heavens with the remnants of his glory. As the destruction of matter in one form is made necessary to its resurrection in another, so it would seem that the perishing of the Jewish nationality was in order to the universal acceptance and the everlasting establishment of Jewish ideas. Never before was there an instance of such a general rejection of the person and character, and acceptance of the doctrines and dogmas of a people.

'We admire with unlimited admiration the Greek and Roman, but reject with contempt his crude and beastly divinities. We affect to despise the Jew, but accept and adore the pure conception of a God which he taught us, and whose real existence the history of the Jew more than all else establishes. When the Court Chaplain of Frederick the Great was asked by the bluff monarch for a brief and concise summary of the argument in support of the truths of Scripture, he instantly replied, with a force to which nothing could be added, 'The Jews, Your Majesty, the Jews.' "

Know you not *The Scattered Nation?* If not, you should despatch promptly one dollar and fifty cents to the bookstore in Raleigh of Messrs. Alfred Williams and Company for a copy of the little volume of fifty-nine pages. When you shall have finished reading the little book you will know more about the Jew in history, more about his qualities and his attributes, more about his immortal contributions to mankind; and you will know more about eloquence, too, and more about the influence and the dignity and the majesty of the English language when used by a master of oratory.

Zebulon Baird Vance, a child of the mighty mountains of North Carolina, lived betwixt 1830-odd and the latter years of the nineties. When he was only a boy he was a representative in the National Congress. When he was scarcely more than thirty years old he was elected Governor of his state while he was battling against its invaders as colonel of a regiment of mountain-men. During the Civil War he was re-elected Governor of North Carolina. Denied by the carpet-baggers the seat in the United States Senate to which he had been elected, Vance bided his time, and in 1876 he jettisoned the political pirates and became again for the third time Governor of his state. While serving his people in that capacity he was sent to the United States Senate, and he was kept there until death removed him in 1894.

Vance was a superb specimen of manhood. His physical structure commanded admiration. The artist's conception of him, in full size, stands on the grounds of the Capitol in Raleigh. He came from a cove in the mountains near Asheville. His ancestors were pioneers in that region. They were brave people who insisted upon the possession and the exercise of individual liberty. Vance was largely self-made. But he was innately endowed with those attributes with which he experienced little difficulty in making of himself a man. He was physically and mentally and spiritually powerful. He knew the human heart, and he made himself such a master of language that he could become a congenial member of a group of illiterates and also the author of *The Scattered Nation.* Most of the mature jokes still told in North Carolina, bad and good, are attributed to him. Even before an audience of the best people of his state he could, and he did at times, make use of vulgarity and of profanity without causing offense. He illustrated his conceptions of great truths sometimes through an appeal to high intelligence, sometimes by a joke, sometimes by a figure of speech laden with ridicule and derision that laughed his opponent from the rostrum. Did he not once remark that a certain political leader changed his attitude so radically and so suddenly that the seat of his breeches was in front? You cannot fully appreciate the majestic tribute of a great man to a mighty people without knowing somewhat the characteristics of the author.

It is not necessary for me to inform you about Professor Maury. Most of us in our early school-days became acquainted with Matthew Fontaine Maury through his physical geography. Maury was probably the world's first oceanographer. I doubt not that his scientific work has made the seven seas much safer thoroughfares. He, too, like Vance, gave himself to the Confederacy, and in his latter years he occupied a chair in the faculty

of the Virginia Military Institute. He lies in sleep here in Richmond in Hollywood Cemetery.

Vance's address in estimation and in appreciation of the Jews in history was probably immediately evoked by the cruel persecution of the Jews in Russia. I can well remember some of those pogroms. But the predicament of the Jew is more precarious today than it was in the nineties. In most of the great nations today the Jew is being persecuted. The word is used in all of its dreadful elastic fulness. The Jew is in some countries being deprived of his property, of his liberty, of economic opportunities; and in several countries he is being not only robbed and assaulted, but is being driven from country to country, and made a peripatetic outcast. Were Vance a representative of the State of North Carolina in the United States Senate today I do not believe he could repress his outraged sense of injustice. I think he would speak out in bold denunciation of the assaults that are being made upon the members of a great race by despotic governmental power in many countries of Europe. And I believe that Senator Vance would advocate opening the doors of our great country to persecuted Jews from Germany, from Italy, and from all other despotic nations. Our own great country is still relatively uninhabited. Even here in the most ancient portion of Virginia the rural regions are scarcely touched by man's activities. And the same statement is even more applicable to other sections of the South. The mid-West and the far West are still pioneer, relatively undeveloped countries.

The Germans and the Italians are seeking sustenance for their children and for themselves by robbing the Jews. And in so behaving the Germans and the Italians are conducting themselves as we ourselves would probably be doing were we as much in want as they. All of us are fundamentally alike, much more alike than unlike, whether we be Abram's children or whether we have descent from the Edenic parents by some other limb of the genealogical tree.

Hungry people are always potentially revolutionary people. Hunger is painful, and no one willingly submits long to pain. If the great nations had sufficient intelligence and courage and character to select and to send to an international conference reputable representatives for the purpose of establishing peace throughout the world they would accomplish their purpose by distributing the over-crowded people throughout the wholesome, unoccupied and undeveloped areas of the earth. It is vain and foolish to expect the Italians to be serene and content while the population of Italy, more than half that of our own country, are kept in a state of intolerable congestion and in starvation on a small, poor peninsula. And Germany and ancient Austria must be almost as crowded and the people almost as hungry as the Italians. Yet here in our country there are vast uninhabited and undeveloped regions. And of the wide stretches of Russia such a statement must be even more true. Why should not the mighty British Empire be willing to open its great spaces to settlers from congested Europe? In Canada, in Africa, in Australia, in New Zealand and upon numerous islands here and there in the seas the crowded millions of Europe could build themselves homes. Instead of making room for the Jews in such countries, the British Government drives them to the Holy Land, once theirs, but now for many years Arabian country, and both the Jews and the Arabs are vexed by the British hypocrisy and rapacity.

I do not understand hatred. I have no satisfactory explanation of race prejudice. I think I know that one hates upward and that one despises downward. One hates the cruel display of power; one despises weakness and pusillanimity. Those who hate the Jew and hound him are paying tribute to the Jew. They fear him. They are expressing through their hatred their envy of the Jews' intelligence and industry and character and success. But no individual and no people can be great, honest, decent, or long successful who engage in persecution. A people stirred by hatred within themselves thwart their own highest aspirations. Hatred is even more destructive to those who hate than to those who are hated. Should I feel moved by unrestrained wrath to lift both my hands against some fellow-mortal, I should be restrained from venting my spleen against congregate Israel by the recollection of the voice of The Creator speaking to Abram, the father of the faithful: "And I will bless them that bless thee, and curse him that curseth thee: and in thee shall all families of the earth be blessed." The words are the words of God.

How could we christen our infants and bury our dead without praying the prayers and chanting the songs of the Chosen People? Can any people whose members gave us our religion, our prophets, our laws, our most sacred and our most majestic literature be a people deserving persecution? Would anyone of us be willing to lift a hand against the author of the Pentateuch, the twenty-third Psalm, the last chapter of Ecclesiastes, the book of Isaiah and of Ruth, and the accounts of the life and the tragedy of the man of the Land of Uz? Ever since that day when Abram went eastward into the land of Shinar his immortal descendants, sometimes

blessed and sometimes cursed by God, have been making their everlasting imprint upon mankind and upon history. There is no domain of worthy thought to which the Jews do not continue to make inspiring contributions. He who would forget their past and persecute them is a fool who will ultimately be damned by his own folly. Who can name an eminent American physician of middle age or older whose distinction has not been made possible for him largely by the tutelage of Jewish physicians both here at home and abroad?

I think of three great groups of people—the Jews, the Chinese, the Scotch. They are immortal because of their attributes. I pray that whoever maltreats any of them may be harried forever by the Hounds of Hell.

Every mortal who respects virtue, who admires courage and who recognizes intellectuality and who reveres spirituality will be lifted up by reading Vance's *The Scattered Nation*. It constitutes the eloquent tribute of a brave man to a mighty people.

Ancient Medicine of the American Indian

(The *Od Quarterly*)

Coca leaves were used for the anesthetic, crushed and applied locally, and obsidian was the surgical instrument used. The wound was cleansed and dressed with salts having ant'septic properties.

Trephine operations were common. They used quick drying clay splints after bone setting, and cupping for abscesses and pneumonia, ten centuries before Columbus came to America. Other mechanical means of curing consisted of pressure with a sash or cord, cauterizing, scarifying, cutting, blood letting, poulticing, enemata, sweat bath, counter-irritation, drawing teeth and bandaging The Indians possessed a keen knowledge of the therapeutic value of herbs and mineral salts. In the category of their Materia Medica we find cathartics, diaphoretics, expectorants, diuretics and emetics.

In some of the Inca and Chibcha tombs were found teeth inlaid with bits of mother-of-pearl, turquoise or other ornamental material, no doubt done to repair cavities as well as for ornamental purposes, and according to Ramon Mena, M.D., M. Sc. Curator of Primitive Medicine, National Museum of Mexico, the inlay was as perfectly done as was ever any modern filling.

The Indians gave the white man the knowledge of the value of cinchona, coca, ipecac, jalap, hydrastis, and many other medicinal agencies.

Brain Injuries

(*From Page* 168)

relieved. This is not altogether true. Before the medulla breaks under compression, a ventricular needle can be slid in and the pressure relieved. This is sometimes effective and the man can be saved by ventricular puncture, without the risk of lumbar puncture.

Dr. Koonce, closing:

In conclusion I want to say that it is better to be conservative rather than radical. I will just cite an instance in which an operation was done and I later realized that a mistake had been made. The patient died, and although he probably would have died anyhow I believe he would have had a greater chance to live if not operated on.

Indian Medicine

(*From Page* 157)

prostrations of thanks to the Almighty and showed signs of relief. For 3 days consecutively, he was given poison pills, each day reduced by one. Then the Kahn gradually recovered and regained his health.

Kabiraj was at hand during Ihtimam Kahn's fatal illness at Sarail in 1612. Ihtimam Kahn was in the habit of taking bezoar stone (an antidote against poison.) The Kahn unwisely took one pill without drinking vetchwater which was necessary, and though salt was a prohibited article for those who take bezoar stone he ate oiled-bread and saline soup. The subsequent morning, during the review of his troups, he ate bread and cheese, prohibited to those taking bezoar stone. After returning from the tour of inspection, Ihtimam Kahn was loosening his belt in his own camp, when all of a sudden he cried out to his steward: "As I am feeling very weak, place a pillow on the carpet so that I may stretch myself." Then laying himself down on it, the Kahn said: "Call Mirza Nathan at once, my end is near." Nathan ran with bare feet to the side of his father, but reached him when the left eye of the old man had closed and the right eye was open. As soon as he saw the Mirza, he shed tears of grief and closed that eye too.

Shaykh Hushang, son of Islam Kahn, Subadar of Bengal, felt insulted by the treatment given to him by his father and cut through his own stomach with a penknife secretly. But as the knife was small it passed only through the skin and flesh. Islam Kahn was informed of this affair but instead of arranging for the treatment of the son he begin to give him blows with his fist and with an ewer and with bamboo sticks. Then Islam Kahn said to the Surgeon: "If within this week Hushang is not fit to play polo and to attend school and go to mosque, I will kill you all with one stroke." These people, who had incurred the displasure of Islam Kahn began to treat Hushand and within a period of 7 days, they brought him to the mosque, made him play polo and presented him to Islam Kahn in safety.

Zafar Kahn was attacked with a serious illness which paralyzed half his body. The Dewan of Behar, reported to the Imperial Court, that the illness was solely due to fear of imperial displeasure. The monarch of the world became favourably disposed and sent two Messia-like physicians from his staff to Patna to treat him with great care so that he might obtain quick recovery.

During the expedition of Mirza Nathan to rescue refugees from the bank of Brahmaputra, he sighted 3 footsoldiers who had not eaten for 13 days. The Mirza ordered some opium to be mixed with soup and poured it into the throats of those unconscious soldiers. After an hour, they opened their eyes, and said their only food was Zedoary. The Mirza gave them a double dose of the drug, which they were accustomed to take and made them drink an intoxicating liquor made of barley and rice. He ordered them to be massaged with oil. After awhile they regained their senses.

If you put your nose on the grindstone rough,
And keep it on there long enough,
In time you will say there is no such thing
As brooks that babble and birds that sing.
Three things will your whole world compose;
Just you, and the stone, and your damned old nose.

—*Anonymous.*

Morphine Sulphate may be obtained in sterile ampules. Used in the vein its effect is prompt and gratifying.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D. . Richmond, Va

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP Charlotte, N. C

Orthopedic Surgery

O. L. MILLER, M.D. ... } Charlotte, N. C.
JOHN STUART GAUL, M.D. }

Urology

HAMILTON W. McKAY, M.D. } ... Charlotte, N. C.
ROBERT W. McKAY, M.D. }

Internal Medicine

P. H. RINGER, M.D. ... Asheville, N. C.

Surgery

GEO. H. BUNCH, M.D. . Columbia, S. C

Obstetrics

HENRY J. LANGSTON, M.D. Danville, Va
IVAN M. PROCTER, M.D. ... Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D. Richmond, Va.

Pediatrics

G. W. KUTSCHER, JR., M.D. ... Asheville, N. C.

General Practice

WINGATE M. JOHNSON, M.D. ... Winston-Salem, N. C

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D. . Wake Forest, N. C
R. P. MOREHEAD, B.S., M.A., M.D., Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D. ... Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D. ... Greensboro, N. C

Public Health

N. THOS. ENNETT, M.D. ... Greenville, N. C.

Radiology

ALLEN BARKER, M.D. } Petersburg, Va.
WRIGHT CLARKSON, M.D. }

Therapeutics

J. F. NASH, M.D. ... Saint Pauls, N. C.

Tuberculosis

P. P. McCAIN, M.D. ... Sanatorium, N. C.

Offerings for the pages of this journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

This journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

SECRETARY LONG ACCOMPLISHES MIRACLE

THE session of the General Assembly of the State of North Carolina just ended will be remembered by doctors for its enlightened attitude toward health matters. It enacted into law three measures of tremendous importance to the health of the people of the State.

The passage of any one of these laws would have been rightly regarded as proof that the Medicine of today has able, resourceful, energetic representation in the State's legislative halls. The passage of all three is hardly less than a miracle.

Who would have believed that any one session of our General Assembly could be prevailed on to enact: 1) a law making immunization against diphtheria compulsory; 2) a law requiring a really protective examination of all applicants for license to marry—with clauses effectively preventing flouting of this law by going across into another State; and 3) a law requiring a serological test of all pregnant women.

But all these measures have been enacted into laws, laws with teeth. And who has done this. The Secretary of the Medical Society of the State of North Carolina. Of course he had able assistance; but Dr. T. W. M. Long's was the directing genius, his the ability to enlist this assistance and keep it aligned against all opposition.

Conspicuous among the members of the Assembly who had the foresighted statesmanship to lend their strength were O. M. Hull, of Cleveland; Victor Bryant, of Durham; and Fitzhugh Wallace, of Lenoir. These gentlemen should be remembered by every doctor in North Carolina for their services in enacting these laws that keep our State in the van of Preventive Medicine. As a matter of reward for faithful and enlightened service, as well as of assuring retention of such service to the people, these men should be kept in, and advanced in, office.

If Tom Long wants to go to Congress by all means let's send him, on condition that he continue to discharge the duties of Secretary of the State Medical Society.

THE FIRST OUT-OF-THE-STATE MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

BEFORE another issue of this journal comes out our State Medical Society will have held its first meeting beyond the confines of the State. The prospectus indicates that the attendance will suffer greatly. We believe this might have been anticipated. Despite the idea that one can do anything he makes up his mind to do, and the belief that most North Carolina doctors are opulent, for

the vast majority of us the cost of attendance on such a meeting would be onerous. However, a majority of the membership voted for the cruise, so democratic rule requires that the cruise be taken. One may be permitted to wonder how many of those who voted for the cruise will find it inconvenient to take part in it.

It is said that the State Bankers Association and the State Bar Association having held their meetings on the high seas accounts for this innovation on the part of the doctors. It is to be remembered, though, that nothing like as large a number of the low-income lawyers are in the State Bar Association, as of low-income doctors in the State Medical Society; and that it is vain for doctors to try to keep up with bankers in a show of dollars.

This is written by way of consolation when it is realized that so few have shown up, not in any I-told-you-so spirit.

This journal believes that this experiment will convince the doctors of the State that it will be best to hold all future meetings within easier reach of the rank-and-file.

Peanuts to Prevent Pellagra

Pellagra, whatever its cause may turn out to be, is a disease of the South. Granting that some cases are overlooked or misdiagnosed in the North, pellagra causes at least ten times as much illness and ten times as many deaths in the South. Studies in recent years have brought a let-up in proclamations that pellagra is a disease of poverty. True, it affects many more of the poor than of the well-to-do; but the latter class has pellagra in numbers sufficient to make it clear that the disease can not properly be called a poor-man's disease.

Within the past two years a cheap and reliable cure has been made known. Trustworthy doctors say a dime's worth of nicotinic acid will cure most any case of pellagra. If this remedy has any injurious effects they have not attracted attention. However, we have a natural antipathy to taking any drug as a daily ration. It might be pointed out that were it not for the fact that we take sodium chloride daily as a food, we would regard that salt as a drug; but let that pass. Then, it may be that the future will disclose that nicotinic acid is normally to be found in certain foods the regular ingestion of which will do away with pellagra.

In the meantime it appears[1] that a Georgia epidemiologist is convinced that there is in the South a staple crop, which lends itself readily to being made into a staple food which will prevent the development of pellagra. An abstract of the article conveying this intelligence is carried on page 173 of this issue. In this article Dr. Bowdoin takes the sound position that improvement of economic and social conditions must continue, and that balanced diets must be provided through diversification of agriculture and the promotion of desire for such diets on the part of the people now taking the diets lacking in the pellagra-preventive principle or principles and in essential proteins.

Continuing, this Georgia health officer tells us there is a cheap, palatable food substance, rich in the pellagra-preventive factor and in proteins. He might have added that it is a food substance well known to the people among whom pellagra takes its greatest toll, that it constitutes a crop of commercial importance in parts of the South and that it can be readily grown in any State in which pellagra is a problem of consequence.

It seems almost too good to be true—a disease mostly of the poor of the South, that kills many thousands and makes invalids of many more thousands each year, preventable by the greater use of a familiar, palatable food that can be grown all over the South so cheaply that it may be included in even the lowest-cost diets, in quantities sufficient to prevent pellagra and to make these diets meet every nutrititional requirement!

Dr. Bowdoin believes that peanuts, as peanut flour and in various other forms, will prove of great value in prevention and a desirable adjunct in treatment. We believe it, too, and we are passing the news on to Suffolk, Va., to Edenton, N. C., and to various towns identified with the edible known variously as goober, ground-pea, pinder or peanut.

1. Pellagra. What is the Problem. C. B. Bowdoin, M.D., Director Div. of Epidemiology, Ga. Dept. Pub. Health, in *Bl. Med. Assn. Ga.*, March.

To the Tri-State Medical Association Membership

This Association was established more than forty years ago by the leading physicians and surgeons of the two Carolinas and Virginia. Each year a meeting has been held and a program of high order given. The list of past presidents is made up of those who were and are leaders in the profession of the three States.

The Southern Medical Association came into the field nearly ten years after the Tri-State. Since that time many societies have been organized which absorb to a great extent the interest of doctors in the various specialties and take them away from their work for the holding of meetings.

With all this new competition, however, the Tri-State is a strong and growing organization. Each of the last ten years has shown an increase in its membership. This could not have happened

had not the membership believed in the organization and worked for its continued success.

On the President's Page of this issue Dr. Baker discusses some matters of association policy, and he suggests an increase in the number of non-member participants in our programs. Certainly the high quality of the contribution of our distinguished invited guest for the recent meeting would incline us all to favor our president's suggestion. On the other hand, we had contributions of the highest order from our own members, these including meritorious research, high-class work in the specialties and first-grade general practice.

We would be glad, and we have no doubt the president would be glad, to have expressions from every member on this point. It is not too soon to begin right now to consider how this association can improve its service to the doctors in its territory, and to the cause of Medicine everywhere. If past and present officers will take the lead in giving their opinions we are sure other members will not hesitate to tell us what they think, and all will begin to plan now for the very best sort of meeting at Richmond next year.

DOCTOR JOHN K. ROSS

The recent death of Major John K. Ross, U.S.A., retired, a native of Charlotte, N. C. and former member of the Mecklenburg Medical Society, came as no great surprise to his many friends in the profession, as his health of late had been much impaired. Although inactive for the past few years, before entering the army in 1917, Dr. Ross was prominent in Charlotte medical circles. His genial nature and interest in scientific medicine made him both respected and beloved by a large circle of friends.

The following is a brief resume of his career appearing in the Alumni Review of the University of North Carolina:

Ross—Dr. John Kirkland Ross, 62, Charlotte physician, died at his home February 19th of a heart attack. The son of the late Mr. and Mrs. John Baxter Ross of Charlotte, Dr. Ross attended the University in 1895-1903, studying medicine the latter two years and in 1903 receiving A.B. and M.A. degrees. He received his M.D. from Jefferson Medical College and practiced medicine in Charlotte for 10 years before joining the army in 1917. After the War he remained with the army in public health work until he retired three years ago with the rank of Major. Surviving are a sister, Mrs. E. C. Dwelle and a brother, Thomas Ross, both of Charlotte. Burial was in Oaklawn Cemetery, Charlotte.

—ROBERT L. GIBBON
—OTHO B. ROSS

NEWS

Buncombe County Medical Society

President W. R. Griffin called to order on March 20th at 8 p.m., 60 members present and many visitors from neighboring towns and from Johnson City, Tenn.

Dr. John Dougherty then presented a patient who had had a ureteral and a renal stone removed. The work was begun when the child was 19 months of age. He showed the progress of the case by the use of x-ray films.

Dr. Ward, reporting for the committee on P. H. & L. clarified the situation relative to the licensing of assistant druggists. His committee feel that the situation was being satisfactorily handled by the druggists themselves.

The president then introduced Dr. W. R. Johnson, who presented a paper on The Use of the Gastroscope in Diagnosis of Stomach Disorders, demonstrated the instrument itself and with the assistance of colored slides gave the members an opportunity of seeing what the interior of the stomach looks like through the gastroscope. Discussed by Drs. Craddock, Parker, Moore, Edwards, Murphy, Webb Griffith, Jno. Brownsberger, Huffines, Kuscher and Dougherty- closed by the essayist.

The secretary then made several announcements which led to the following action: Dr. Dougherty moved, seconded by Dr. Johnson, that the secretary be instructed to have published copies of the Constitution and By-Laws.

Dr. Julian Moore, moved that we again conduct the annual Tuberculosis Seminar, and that a committee be appointed for the purpose. This motion was seconded and passed.

Dr. Kutscher, moved and Dr. B. O. Edwards seconded, that the Publicity Committee study the advisability of presenting medical discussions to the public via radio. Discussed favorably by Dr. Richardson, and passed.

Dr. Jno. Dougherty moved, and Dr. B. O. Edwards seconded, that the Publicity Committee develop and establish a Speakers' Bureau composed of members of the Society. This motion was passed.

Dr. Murphy announced the arrangements to travel by train to Norfolk, for the Bermuda cruise in May.

Dr. Roy Roberts moved that we endorse the proposed recommendation from the State Medical Society that the State Society publish their own Medical Journal. This motion was seconded by Dr. McGowan, discussed by Drs. MacRae, Webb Griffith, Kutscher, and passed.

G. W. Kutscher, Jr., Sec.

Meeting called to order by President Griffin, April 3rd, 8 p.m.

Dr. S. S. Cooley, introduced the speaker of the evening, Dr. Irving Graef, Assistant Professor of Pathology and Director of Pathologic Laboratories at New York University. Dr. Graef discussed Recent Advances in the Pathology of Renal Disease. Discussed by Drs. Blumberg, Huffines and Johnson.

Dr. Webb Griffith, relative to the Wagner Health Bill No. S1620 recently introduced in the U. S. Senate, outlined the contents of this bill stating that the bill was milder than had been anticipated. When introduced it contained no reference to compulsory insurance, all money is to be expended through the recognized State agencies such as the State Board of Health in N. C. One of the disadvantages of this bill was the fact that the state agency must report to Washington, D. C., twice a year, another that the Surgeon General might stop all expenditure of money at his pleasure. Most of the authority of the execution of the bill seems to rest in the hands of the

head of the Department of Labor. In fact the absolute control of money expenditures under this bill are to be controlled from Washington. $80,000,000 of the total amount is to be used for preventive medicine. All money spent for hospitals must apply to the erection of new hospitals, no money can be used for the assistance of hospitals already established. On a sliding scale $35,000,000 to $350,000,000 is to be applied to the care of the indigent.

The Committee on Social Security of which Dr. Griffith is chairman for the State of N. C., recommends thae every physician, as well as every County Society, wire their Senators and Representatives in Washington that we feel it advisable to delay action on this bill for a period of two years. It is believed that this delay will allow time to study this bill and come to some agreement as to the best feature of it for all concerned.

Dr. C. H. Cocke recommended that the matter be turned over to the committee on P.H.& L. and our own Social Security Committee for study. Dr. Julian Moore put this recommendation in the form of a motion and added that the combined committees have power to act. This motion was seconded by Dr. Geo. Baier, discussed by Dr. Brown, and passed.

These committees met immediately after our meeting adiourned and decided to inform our Representatives and Senators of their decision and requested they give this bill two years further study.

The secretary then read a letter in the form of a questionnaire from the principal of the Sephens-Lee (Negro) High School.

G. W. KUTSCHER, JR., Sec.

PROGRAM

Fifth District Medical Society

Lumberton, N. C., Thursday, April 6th, 5:00 p.m., Lorraine Hotel

I. Pyelitis in Pregnancy .....Dr. N. O. Benson
II. Urinary Antisepsis .....Dr. John M. Harry
III. Certain Practical Aspects of the Diagnosis and Treatment of Conditions causing Bloody Diarrhea .....Dr. J. M. Ruffin
IV. Dinner
V. Practical Considerations of Surgical Management of Goiter .....Dr. Henry W. Poer
VI. Five Commonly Encountered Diseases of the Skin .....Dr. Phil C. Riley
VII. Series Pneumonia Cases Treated with Dogenon .....Dr. R. S. Beam

The above scientific program is the type of program that appeals to every medical man regardless of his specialty. Dr. J. M. Ruffin is head of the Department of Medicine, Duke University. Dr. John W. Poer is of Atlanta, Georgia. Lieutenant Colonel P. C. Riley has recently retired from the United States Army. Drs. John M. Harry, N. O. Benson and R. S. Beam are local men who are leaders in their respective specialties.

SEAVY HIGHSMITH,
President.
O. L. MCFADYEN,
Secretary-Treasurer.

ROCKINGHAM COUNTY (N.C.) MEDICAL SOCIETY new officers are: Dr. Carl V. Tyner, Leaksville, president, succeeding Dr. A. M. Cox, of Madison; Dr. G. P. Dillard, Draper, vice-president; Dr. Allen Byrd, Leaksville, secretary-treasurer.

The annual reunion of the EX-INTERNES OF THE MEDICAL COLLEGE OF VIRGINIA will be held on April 27th. The speakers on the scientific program will be Drs. W. R. Payne, Donald Daniels and Walter Nalls.

A notice will be sent each ex-interne giving further details of the program.

THE NORTH CAROLINA NEUROPSYCHIATRIC SOCIETY met in regular session at the State Hospital, Raleigh, March 31st.

DR. CLARENCE COOK LITTLE, director of the Jackson Memorial Laboratory at Bar Harbor, Maine, spoke at the Phi Beta Kappa dinner, Richmond, on March 6th, on Euthanasia. At the University of Virginia he spoke on March 7th, on Cancer.

DR. BEVERLEY R. TUCKER spoke to a joint meeting of the Parents' Association of the Collegiate School and Saint Catherine's School, of Richmond, on March 13th. His thesis was: The Burnt Offerings of Parents and Teachers.

DR. GEO. A. STOVER, South Boston, Va., was seriously injured March 23rd when a front tire blew out, throwing the car from a deep fill. It is believed that Dr. Stover did not suffer internal injuries.

DR. MARVIN PIERCE RUCKER, of Richmond, will be the principal speaker and guest of honor on April 17th at the first joint meeting of the medical societies of Greenbrier County, W. Va., and Bath and Allegheny Counties, Va., at White Sulphur Springs, W. Va.

DR. SAM F. RAVENEL, pediatrician, of Greensboro, spoke to the Reidsville Rotary club March 27th on Socialized Medicine.

DR. WM. DEB. MACNIDER, Dean of the University of North Carolina's School of Medicine, delivered the annual Mayo Clinic Foundation Lecture at Rochester, Minn., on March 17th.

DR. F. B. WATKINS, superintendent of the State Hospital at Morganton, was elected a fellow of the American College of Physicians at the recent annual meeting of that organization at New Orleans.

DR. B. E. RHUDY, of Greensboro, addressed the Kiwanis Club of that city on The Early Symptoms and Control of Cancer.

DR. RACHEL DAVIS, Kinston, is the new president of the Lenoir County Medical Society. Dr. Paul Whitaker was elected vice president, Dr. Henry Temple, secretary and Dr. Leslie Lee, delegate to the annual meeting of the State society.

DR. HENRY E. SIGERIST, of Baltimore, spoke before the annual meeting of the section on the History of Medicine of the Richmond Academy of Medicine the evening of March 28th on Leonardo da Vinci and Rennaissance Science.

Dr. Sigerist is Director of the Institute of the History of Medicine at Johns Hopkins University Medical School and Editor of the Institute Bulletin. He also is an Associate Editor of *Annals of Medical History* and the author of several books on medical biography and history. Another feature of the program was an exhibit of the history of Egyptian medicine.

MARRIED

Dr. Rowland Haldane Walker, Martinsville, and Miss Margaret Ward Bullock, Farmville, Virginia, were married on March 18th.

Dr. S. Richard Kaplan, Brooklyn, New York, and Miss Reva Syril Stein, Fayetteville, North Carolina, were married in the Waldorf-Astoria on March 12th.

Dr. John Hampton Miller, of Thomas, W. Va., and New York, and Miss Frances Taylor, daughter of Mrs. Frank P. Taylor, of Bridgewater, Mass., March 19th.

Dr. Miller is a graduate of Yale University and the Medical College of Virginia, and was graduate interne at St. Luke's Hospital for one year. He is a son of Dr. Joseph L. Miller, of Thomas, W. Va., donor of the Miller Library to the Richmond Academy of Medicine.

Dr. John H. Miller is now on the staff of the Post-Graduate Hospital, New York.

Mrs. Miller is a graduate of Vassar College.

After June 1 Dr. and Mrs. Miller will be located in Loconia, N. H.

Medical College of Virginia

The Program of the College's annual Stuart McGuire Lecture series, with the Spring Postgraduate Clinics, in coöperation with the Department of Clinical Education, Medical Society of Virginia, will be given April 27th and 28th. The Stuart McGuire Lecture, Epilepsy—Mechanism and Pathology, will be given by Dr. Wilder H. Penfield, Montreal Neurological Institute. Other features will be presented by Dr. H. C. Henry, Associate in Neuropsychiatry, Director of State Hospitals of Virginia; Dr. J. Asa Shields, Associate in Neuropsychiatry; Dr. G. B. Arnold, Superintendent of the State Colony for Feeble Minded and Epileptics; Dr. C. C. Coleman, Professor of Neurological Surgery; Dr. Charles Bagley, Jr., Professor of Neurological Surgery, University of Maryland; Dr. J. M. Meredith, Assistant Professor of Neurological Surgery, University of Virginia; Dr. W. Gayle Crutchfield, Assistant Professor of Neurological Survey; Dr. Joseph R. Blalock, Associate in neuropsychiatry, Supt. of Sauthwestern State Hospital; Dr. R. Finley Gayle, Jr., Professor of Neuropsychiatry.

Dr. Lewis E. Jarrett, Director of the Hospital Division, attended the regional conference of the American College of Surgeons in Baltimore recently, giving a paper on Professional Standards as Affecting Hospital Practice.

The woman's medical fraternity of the college sponsored an address by Dr. Priscilla White of Boston on March 7th at the Richmond Academy of Medicine. Doctor White spoke on Some of the Newer and Interesting Phases of Diabetes.

The annual spring symposium of the school of pharmacy was held March 9th. Speakers included Dr. E. F. Kelly, Secretary of the American Pharmaceutical Association; Mr. A. L. I. Winne, Secretary of the State Board of Pharmacy; Dr. Harvey B. Haag, Professor of Pharmacology; Dr. Rolland J. Main, Associate Professor of Physiology, and Dr. Roshier W. Miller, Professor of Materia Medica, and Mr. W. G. Tarrant, a druggist of the city. Dr. J. A. Reese, Assistant Professor of Pharmacognosy, acted as Chairman of the Committee on Arrangements for the symposium.

Dr. Patrick F. Drewry, Jr., has been appointed full-time Assistant Professor of Neuropsychiatry. Doctor Drewry is now in London for special study in this field under a fellowship grant from the Rockfeller Foundation. He will come to the college next spring when it is anticipated the new hospital, which will have an active psychiatric service, will be completed.

Dr. William T. Sanger, President, made the Founders' Day Address at Bridgewater College, April 3rd. On this occasion he was awarded the honorary degree of Doctor of Humane Letters by his alma mater.

Dr. Fred P. Fletcher, President of the Alumni Association, met with the New York alumni on March 18th.

Mr. Max Minor Peet, Professor of Surgery, University of Michigan, was a visitor to the college on March 16th. During his visit he lectured to the junior and senior classes of the school of medicine.

Dr. William B. Porter, Professor of Medicine, attended the annual meeting of the American College of Physicians at New Orleans, March 27th-April 1st.

BOOKS

CLINICAL BIOCHEMISTRY: By Abraham Cantarow, M.D., Associate Professor of Medicine, Jefferson Medical College of Philadelphia, and Max Trumper, Ph.D., Clinical Chemist and Toxicologist; formerly in charge of the Laboratories of Biochemistry of the Jefferson Medical College and Hospital. With a foreword by Hobart A. Reimann, M.D., Professor of Medicine, Jefferson Medical College. Second Edition, Revised. 666 pages. Philadelphia and London: *W. B. Saunders Company*, 1939. Cloth, $6.00 net.

For nearly a decade this book has been a popular, standard text in this important field. One author a clinician, the other a laboratory expert, the joint work of the team is an excellent exposition of the subject.

ELIXIR
DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*
Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

This edition brings up to date discussion of all the phases of metabolism and has chapters on nephrosis, liver function, chemical investigation of stomach function, pancreatic function, changes in pregnancy and lactation, cerebrospinal fluid, and water balance.

The final chapter outlines the chemical diagnostic features of various disorders of the endocrines, of the anemias, of diabetes, of vitamin lack, icterus and nephritis.

THE 1938 YEAR BOOK OF GENERAL THERAPEUTICS, edited by BERNARD FANTUS, M.S., M.D., Professor of Therapeutics, University of Illnois College of Medicine; and AARON L. GOLDBERG, M.D., Assistant in Medical Dispensary at University of Illinois. *The Year Book Publishers,* 304 S. Dearborn Street, Chicago. $2.50.

Subjects of great practical importance are: Flavors for medicines, protection against sunlight, glycerin treatment of infected wounds, special technics, sulfanilamide, gentian violet, urea and antimalarials. Sulphur in a bland soap paste is recommended for itch. Ferrous iron is still found better than ferric. Copper has about lost its popularity. Transfusion is not good for every sick or injured person, and should be given only for good reason. Gland extracts and vitamins are dealt with in a rational manner. Cobra venom as an analgesic has good endorsement. Nitroglycerin has given good results in vomiting of pregnancy. Mercurial diuretics are still in favor. Hydro- and mechanotherapy, vascular gymnastics, phototherapy, diathermy, x-rays, climate—each subject has one or more articles.

A study of absorption of drugs from the skin and various mucous membranes is well worth the price of the book.

GONORRHEA IN THE MALE AND FEMALE: By P. S. PELOUZE, M.D., Assistant Professor of Urology, University of Pennsylvania; Special Consultant to United States Public Health Service; Member of Board of Directors, American Social Hygiene Association and American Neisserian Medical Society. Third Edition, Thoroughly Revised. 489 pages with 144 illustrations. Philadelphia and London: *W. B. Saunders Company,* 1939. Cloth, $6.00 net.

The success of the two previous editions and the many recent advances in this field warrant a new edition. Much has been condensed, much deleted and much added. The necessity for the use of a differential stain before pronouncing any diplococcus found in the urethral secretions a gonococcus is emphatically stated. The author puts no faith in the existence of any such thing as dormant gonorrhea. He believes that a surface that drains well recovers well. He is very sceptical of a male contracting gonorrhea in any innocent way. If chemical prophylaxis is done properly within two hours after exposure, few infections will occur. Alcohol is the greatest factor in chronicity and a great factor in producing complications. Care in choosing and using local medication is enjoined. The good and bad results from the administration of sulfanilamide are impartially recorded. Little good comes from sandalwood oil or alkalis. Proper prostatic massage is described in detail. In epididymitis surgery is seldom indicated. With gentle treatment, gonorrhea seldom involves the joints. Gonococcal meningitis is taken into account, and other rare complications. An important section treats of nongonococcal urethral discharge.

Part Two is devoted to the manifestations of gonorrhea in the female—its variability, its tendency to chronicity, its difficulty of diagnosis in many instances, measures to prevent complications, gonorrhea in female children.

Part Three, dealing with The Medical Profession and Gonorrhea Control has as subheads: The problem, the attitude, the dispensary, the solution, the druggist, the prostitute, the public, the charlatan and the battleground.

The book is a wholesome exposition of an unwholesome subject. It is in many ways unorthodox, but in all ways reliable.

THE KNACK OF SELLING YOURSELF, JAMES T. MANGAN. *The Dartnell Corporation,* Chicago, New York and London. $2.50.

The reader is told of the importance of speaking, of speaking distinctly, of speaking correctly, that "either you become a public speaker or you can never be a real big shot." The author urges that you admit no weakness, avoid the mike, go in empty, toot your own horn, put on a front, be an egotist and make them like it and avoid facts. The hero of the book is any "Booster."

CLINICAL GASTROENTEROLOGY, by HORACE WENDELL SOPER, M.D., F.A.C.P., St. Louis. With 212 illustrations. *The C. V. Mosby Company,* St. Louis. 1939. $6.00.

The book is written with the purpose of clarifying a subject which the author says has become entirely too complex. The fact that there are only 300 pages, and half of these taken up with illustrations, argues that the purpose has been accomplished. The essentials of the subject are presented clearly and in few words, and the illustrations are numerous and excellent.

POPULATION, RACE AND EUGENICS, by MORRIS SIEGEL, M.D., Published by the Author, 546 Barton St., East, Hamilton, Ontario. 1939.

In the preface it is emphasized that both negative and positive eugenics are important. It is said that 5 to 10% of the world's population are subject to maladies which should cause these persons to be

prevented from propagating. The tendency of the better educated to produce few offspring is deplored, and efforts toward increasing the propogation of this group are designated as positive eugenics, to which Book I is dedicated. A lot of words are used up in establishing the fact that the offspring of those who manage to get on top of the pile are usually shrewder. For greater fecundity among the poor various reasons are ascribed. Housing conditions must be improved, people in the 20's must be enabled to support families, rural and industrial districts must have birth-control clinics, the attitude toward marriage must be changed, better salaries and wages should be paid as the family is established and as it grows. The compiling of accurate case histories will add immeasurably to our knowledge of heredity.

Racial legends and fabrications and rational marriage are correlated. The feebleminded tend to reproduce their kind. The mode of transmission of mental disorders is not understood. Epilepsy is apt to be transmitted to descendants.

The four main restrictive measures are education, restrictive marriage laws, segregation and sterilization.

A remarkably comprehensive discussion of the whole subject with a definitely promising plan for amelioration of the growing evils of non-propagation of the fit and over-propagation of the unfit.

THE 1938 YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY, edited by FRED WISE, M.D., Clinical Professor of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University; and MARION B. SULZBERGER, M.D., Assistant Clinical Professor of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University. *The Year Book Publishers, Inc.*, 304 S. Dearborn Street, Chicago. $3.00 p.p.

The period covered by this review was fruitful in advances in this field and the editors have used unusual ability in choosing the articles to abstract for this volume.

DEATHS

Dr. Morriss Barret of Goochland County, Virginia, died at his home at Maidens, March 10th, at the age of 76. Dr. Barret was a graduate of William and Mary College and of the Medical College of Virginia. He practiced in Richmond in 1884-5 and the whole time since then in Goochland.

AN unwarranted diagnosis of heart disease may seriously affect a career.

IRRADIATION is becoming more and more used in the treatment of inflammatory conditions.

LEAD POISONING of a moderate degree is frequently overlooked.

VITAMIN PRODUCTS CO. V·P TRADE MARK MADE IN U.S.A. MILWAUKEE

Single Vitamin Concentrates

A - B - C - D - E - F - G

VITAMIN D COMPLEX

To maintain blood calcium. Can be proved by blood calcium tests before and after administration in hypocalcemic subjects.

A MONTHLY LEAFLET, "VITAMIN NEWS," IS BEING MAILED FREE TO ANY PHYSICIAN UPON REQUEST :: BACK NUMBERS AND A HELPFUL INDEX ARE ALSO AVAILABLE.

"CATALYN" is a combination of concentrates from food sources that has been found effective in the prevention and relief of symptoms of multiple vitamin deficiency, IN THE HUMAN SPECIES. The concentration has been accomplished by physical rather than chemical methods, to insure the presence of the complete "COMPLEX" of associated food principles that are necessary for best results.

More information from us or from our North Carolina Distributor, GEORGE TYNER—503 1st Natl. Bank Bldg., Charlotte, N. C.

VITAMIN PRODUCTS COMPANY - - MILWAUKEE, WIS.

CHUCKLES

I'm allergic to cockle-burs, orris root and dust
And likewise to snakes, purple, Hitler and rust.
I'm allergic to "O.K." "outstanding" and tomatoes,
Also to Japs, Cousin Mary, climate, and potatoes.
I'm allergic to all commentators, to bath powder and static.
I react violently to sap-heads, sore-heads, hop-heads, and amateur dramatics.
I'm allergic to artichokes, goat's milk and alarm clocks,
And to cotton, dandruff, beans, flowers, and live stock.
But *tempus fugits*, and I needs must go,
And hit the hay I'm allergic to—No—
A feather bed is just as bad,
This cock-eyed asthma will drive me mad!
I'm allergic to everything—all but a few,
But believe me, Old Gal, I'm not allergic to YOU.

—*Jl. A.M.A.*

"Paper, Mister?"
"Can't Read."
'Look at the pictures."
"Can't see."
"Well, you've got a head like a billy goat; eat it."

"How did you find your date at the dance last night when the lights went out?"

"I picked her out by the Braille system." — *S. C. Wampus.*

ASAC

ELIXIR ASPIRIN COMPOUND

Contains five grains of Aspirin, two and a half grains of Sodium Bromide and one-half grain Caffeine Hydrobromide to the teaspoonful in stable Elixir. ASAC is used for relief in Rheumatism, Neuralgia, Tonsillitis, Headache and minor pre- and post-operative cases, especially the removal of Tonsils.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists* *Established* *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request

GENERAL

Nalle Clinic Building

THE NALLE CLINIC

412 North Church Street, Charlotte

Telephone—3-2141 (*If no answer, call* 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
GYNECOLOGY & OBSTETRICS

EDWARD R. HIPP, M.D.
TRAUMATIC SURGERY

PRESTON NOWLIN, M.D.
PROCTOLOGY & UROLOGY

Consulting Staff

DOCTORS LAFFERTY & PHILLIPS
RADIOLOGY

HARVEY P. BARRET, M.D.
PATHOLOGY

General Medicine

LUCIUS G. GAGE, M.D.
DIAGNOSIS

LUTHER W. KELLY, M.D.
CARDIO-RESPIRATORY DISEASES

J. R. ADAMS, M.D.
DISEASES OF INFANTS & CHILDREN

W. B. MAYER, M.D.
DERMATOLOGY & SYPHILOLOGY

WADE CLINIC

Wade Building
Hot Springs National Park, Arkansas

H. KING WADE, M. D.	*Urology*
CHARLES S. MOSS, M.D.	*General Surgery*
J. O. BOYDSTONE, M.D.	*General Medicine*
JACK ELLIS, M.D.	*General Medicine*
FRANK M. ADAMS, M.D.	*General Medicine*
N. B. BURCH, M.D.	*Eye, Ear, Nose & Throat*
RAYMOND C. TURK, D.D.S.	*Dental Surgery*
A. W. SCHEER	*X-ray Technician*
ETTA WADE	*Clinical Pathology*
MARY ALICE PHILLIPS	*Clinical Pathology*
MARJORIE WADE	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.

Diagnosis and Treatment
in
INTERNAL MEDICINE

Medical Building Charlotte

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.

ORTHOPEDIC SURGERY and FRACTURES

Professional Building Charlotte

HERBERT F. MUNT, M.D.

FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS

Nissen Building Winston-Salem, N. C

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., MAY, 1938 No. 5

Hemolytic Jaundice*

Addison G. Brenizer M.D., Charlotte, North Carolina

HEMOLYTIC jaundice is a disease primarily due to increased fragility of the erythocytes and characterized by anemia, increased destruction of the red blood cells, acholuric icterus, splenomegaly and a pronounced increase in the recticulocyte count. Doan[1] states positively that "true hemolytic icerus is always the manifestation of an inherited constitutional defect, characterized when clinically active by recurring crises of deglobulization, anemia, increased erythrocyte fragility, and unusually high reticulocytosis, acholuric icerus and splenomegaly." As Nesler[2] aptly says: "Both congenital and acquired forms of the disease are recognized. The principal difference between the two is the age at the time of onset; in general, the course of the acquired form is more severe." The diagnosis is made from the history, the detection of a symptomless mild jaundice (more or less severe) and an enlarged spleen, and from laboratory examinations. The urine does not show bile, but contains an excessive amount of urobilinogen and urobilin, as do the feces. The icterus index may be increased to 100; the indirect van den Berg reaction is positive, the direct reaction is negative. The reticulocyte count is between 5 and 35 per cent in most cases, but may rise as high as 95 per cent. The fragility of the erythrocytes is increased to between 0.60 per cent and 0.40 per cent (normal 0.42 to 0.30 per cent).

The following is a citation of four cases of the congenital (familial) type and two cases of the so-called acquired type. The six cases about illustrate most of the findings in hemolytic jaundice (icterus, anemia).

Case I is the father, brother and uncle, respectively, of Cases II, III and IV. He (father, brother and uncle) died in the hospital while being prepared for a splenectomy. The fact that he died "while being prepared" for a splenectomy might be explained in my Case V of the so-called acquired type and the two cases recently cited by Sharpe and Davis[3].

I continue to use the adjective "so-called" before the acquired type because I am taking Doan's[1] word for it that among the cases followed by him, when properly tested, the congenital and acquired types seemed to be the same entity more or less exaggerated, differing also in the time of appearance. From the standpoint of heredity, he claims that the disease may be passed without being made evident in the individual, certainly not recognized without hematological studies. The two acquired cases recited in my group of six cases of hemolytic jaundice would seem sporadic and individual so far as a thorough inquiry into the two family histories would show, both as to ancestry and posterity. I must let my reader choose for himself a familial hemolytic jaundice, becoming evident sooner or later, or two distinct types: (a) the congenital or familial and (b) the acquired type. My conviction is that there is an acquired type much more severe than the congenital or familial type. It is true, on the other hand, that the father, brother and uncle, who died when he was being prepared for a splenectomy, was an acquired type until jaundice and anemia proved to the brother, daughter and brother's daughter that they had the same disease. Heretofore, they had all been treated for attacks of malaria.

Case I, father of Case II, brother and uncle, respectively, of Case III and Case IV, a white man, aged 38, died at the Charlotte Sanatorium September 29th 1920, while being prepared to be operated upon. He was jaundiced and pale, and had a large mass in his left side. He had had many attacks of jaundice, pallor, fever and pain in his left side. This last attack was his worst. There was some confusion about whether this mass was kidney or spleen. While the doctors debated, he [illegible] and died at [illegible] years.

*Presented to the meeting of the [illegible] at Charleston, February 20th-21st.

Case II, daughter of Case I, niece of Case III, and first cousin of Case IV, a white matron, aged 27, says that all the above named persons were thought to have "bilious spells from malaria," and the eight-year-old cousin had worms in addition. (In fact, she vomited a long, living round-worm the third post-operative day). Married seven years, and has two children, one five and one two years, both in good health.

Patient has had "bilious spells" when she became yellow, paler, temperature rose and she was painful across her upper abdomen. She noticed a large mass in her left upper abdomen two years ago. She says that she was toxic during both pregnancies. For four or five months, has felt exhausted all the time.

Physical examination May 25th, 1938, showed a young woman obviously anemic, her skin of a lemon yellow color, mucous membranes, palms and soles quite pale. Spleen greatly enlarged, reaching to mid-line. Patient had already received (May 23rd, 1938), 300 c.c. of citrated blood and the following day 525 c.c. Temperature rose to 102 and 103°. On June 14th, a splenectomy was done. She was operated on again twenty-two days later (July 6th), and the surgeon wrote upon his operative record "widespread mesenteric adenitis—probably malignant." Appendectomy, closure. The surgeon wrote on his chart July 20th: "Following operation, the patient made an uneventful recovery for about ten days, and then began to have some severe abdominal pain and nausea, but obstinately constipated; had constant severe soreness and exquisite tenderness over the entire abdomn, but particularly marked in the lower right quadrant. Wound appeared clean, pelvic examination negative. These symptoms persisted with increasing intensity, and it was decided to operate. The abdomen was opened and a widespread mesenteric adenitis was found, the source being a badly infected appendix; following removal of the appendix, an uneventful recovery followed, and she was allowed to leave (July 20th), much improved and wound entirely healed."

This widespread mesenteric adenitis is very interesting, showing again how, in the absence of the spleen removed twenty-two days before, the lymphatic system compensates or takes on some function of the spleen. A general lymph adenopathy, enlarged liver and absolute lymphocytosis during the course of paroxyms of chills and fever was reported by Ingalls in a patient without a spleen, treated for dementia paralytica by the induction of malaria.

The laboratory work on Case II before she had blood transfusions, May 21st, showed: entirely negative urine, no bile, w.b.c., 4,150; r.b.c., 2,990,000; hgb., 11.2 gm. per 100 c.c. (73%); dif.—polys. 82, lymphs. 17, l.m. and t. 1%: erythrocytes, great variation in size, many large and many small r.b.c., shape normal, hgb. content high.

After 825 c.c. of blood May 23d and 24th: urine, no bile, urobilinogen faintly positive. Blood: reticulocytes 2.5%; icterus index 14; van den Berg: direct, immediate negative, delayed negative, indirect positive; no malaria parasites. Fragility test: hemolysis begins at 0.44 (normal 0.42-0.44); hemolysis complete at 0.32 (normal 0.32-0.36).

Blood work September 10th: hgb. 85%; r.b.c. 5,600,000; w.b.c. 11,700—n. 66, l. 26, e. 1, mon. 7, b. 0; platelets 275,000. Fragility test: hemolysis begins 0.50, hemolysis complete 0.38, control 0.42-0.34.

On September 10th and December 30th patient looked quite well, and said she felt better than ever before in her life.

Case III, man, aged 35, (August 25th, 1938), brother of Case I, uncle of Case II, father of Case IV, married 10 years, three children. One child, brother and niece have same trouble that he does. Large mass in left side, which is painful when he has attacks. Three attacks a year: jaundice, pain in upper abdomen and kidney region, headache, nausea, vomiting and fever. These attacks are not more frequent lately, but are more severe. Had two ulcers of left leg that healed after splenectomy. Temperature 99, pulse 70, respiration 20, b.p. 120/70, w.b.c. 8,500—n. 84, e. 2, mon. 2, s. 2; r.b.c. 3,200,000; hgb. 65%; platelets 270,000. Wass. neg; Kahn negative. No parasites in blood and stools. Urine negative; no bile. (For some unknown reason fragility test not done). Operation September 5th: transverse incision, splenectomy.

Blood work December 30th, 1938: Hgb. 90; r.b.c. 4,650,000; w.b.c. 10,500—n. 74, l. 14, e. 4, mon. 8, b. 0; platelets 360,000. Fragility test: began 0.50, complete 0.40; control 0.42 - 0.34. Patient physically quite well, and says he feels well.

Case IV, child 8 years old (August 30th, 1938), daughter of Case III, niece of Case I, first cousin of Case II, has had practically the same history of attacks as other members of the family, and everybody in the family is sure she was born with jaundice, and that her attacks are more frequent and very severe. She passed a lot of round-worms. The other two children have had no such attacks. She is now beginning to have an attack.

Blood work July 14th: hgb. 50%; r.b.c. 3,100,000; w.b.c. 11,600—n. 91, l. 5, e. 3, mon. 1, b. 0; platelets 240,000. Fragility test: hemolysis

begins 0.52, complete 0.38; control 0.42-0.34.

On August 30th: patient jaundiced, pale, temperature 101°, vomiting, large painful spleen. Operation August 31st: transfusion 300 c.c. blood and splenectomy. Uneventful course except a rise of temperature to 104.6° on the day of operation, and again to 101° on third day. That day she vomited a long round-worm.

Blood work December 30th: hgb. 85%; r.b.c. 4,500,000; w.b.c. 17,000—n. 77, l. 21, e. 0, mon. 1, b. 1; platelets 300,000. Fragility test: began 0.5, complete 0.38; control 0.42-0.34.

The weight of the spleen in these cases varied from 1145 to 300 gms. Microscopic (Dr. L. C. Todd): (The descriptions of the three spleens were almost exactly the same)—Engorgement of reticular meshes, venous spaces showing relatively little blood. There is a hyperplasia of the recticulum cells seen in areas where the hyperemia is less intense and there is a generalized lymphoid hyperplasia of the malpighian corpuscles. Enlargement of the spleen is due to engorgement and hyperplasia. There is increased blood destruction as evidenced by erythrophagocytosis and siderosis. *Diagnosis*: These findings are those of constitutional hemolytic anemia ("familial hemolytic jaundice") but would have to be proven by clinical and hematologic criteria.

Case V (April 28th, 1924), white unmarried farmer, aged 31, with marked anemia. Has been weak and pale for eighteen years, the condition varies; has been very severe for past several months. Dr. William Allan: "This man presents a striking appearance—tall, thin, ghastly pale with deeply bronzed face and hands; is evidently weak, short of breath, with swollen ankles. Temperature 100, pulse 90, b.p. 105/50. Abdomen full, with thin walls. The spleen extends to the crest of ilium, edge of liver palpable, abdomen otherwise normal.

"Blood work: w.b.c. 6,300—n. 72, l. 25, e. 1, b. 1, myelo. 1, a few normoblasts; r.b.c. 1,352,000—red cells show very marked variation in shape, size and staining; hgb. 30%; color index 1.1%. Fragility test: began 0.40, complete 0.32. Blood serum tested for bile and found positive. Urine negative for sugar, albumin, indican and bile. Urobilinogen strongly positive.

"A severe hemolytic anemia, which shows a blood picture of pernicious anemia, but the clinical picture is that of hemolytic icterus."

Starting with 1,352,000 red cells and 30% hemoglobin, after several massive blood transfusions—one given the day before and one on the day of operation—the red count was 1,696,000, hgb. 30%, whites 6,900. This phenomenon is further explained by Sharpe and Davis[8]. Splenectomy was done June 17th, 1924.

Blood 14 days later: r.c. 4,336,000 hgb. 65%; w.c. 12,200—n. 61, l. 29, e. 3, b. 7; no nucleated reds; color index .75.

January 8th, 1939: r.c. 5,600,000; hgb. 100; w.c. 7,900—n. 69, l. 27, e. 1, m. 3; platelets 360,000; fragility 0.46-0.34. Patient in excellent health. In this case, apparently, the red cells were destroyed as rapidly as they were transfused and the patient gained nothing until his spleen was removed. The point made here is further clarified by the recent paper of Sharpe and Davis[8] explaining severe reactions following transfusion in hemolytic jaundice.

Case VI (August 13th, 1934), white matron aged 61. Complaint: Jaundice, paleness, weakness, gas pains in upper abdomen, large mass in left upper abdomen, which she noticed for some years. Is getting paler, more jaundiced and weaker for the past few months. She has had her gallbladder drained (medical); no stones have been found. She has had five transfusions, receiving 2,500 c.c. of blood, but continues to destroy her red blood cells. Temperature 100.2, pulse 100, respiration 20, b.p. 120/70. Abdomen: very large hard mass, emerging from left costal margin and extending below navel, notch can be felt and seems fixed under ribs (large spleen).

Blood work August 6th, 1934: r.c. 1,200,000; hgb. 3.9 grms per 100 c.c. (28%). Schilling hemogram: 0, 0, 2, 5, 10, 45, 37, 1; reticulocytes 40%; icterus index 32.5.

There is a marked decline in megalocytes, an occasional normoblast. Reticulocytes 40% and majority are very young forms. With the rapid formation of the red cells, there must be a very rapid hemolysis of the patient's own cells to keep the red count so low. Marked hemolytic jaundice. Fragility test 0.50-0.36. Wassermann, Kolmer, Craig, Kline and Kahn negative. Operation August 15th: splenectomy. Spleen: weight 1140 grms.; 24 by 12 by 7 cm.; 180 c.c. of blood drained when hilus ligation is removed. Enlargement with retention of normal shape, no nodules, no tubercles. Capsule thin and smooth, no peritoneal adhesions. Of firmer consistence than normal. Cut surface shows a deep red pulp with widely separated and prominent follicles.

Microscopy: The follicles are widely separated; the pulp is crowded with red blood cells, though the sinuses are relatively empty. The reticuloendothelial cells are large oval and crowded with blood pigment. The reticulum and trabeculae are not thickened.

November 22nd, 1935: r.b.c. 4,240,000; hgb. 11.6 per 100 c.c. (84%); w.b.c. 7,050—dif. (Schilling hemogram): 0, 0, 0, 5, 2, 43-49, 1.

Excerpt from patient's letter, January 4th, 1939: "I have completely recovered, and am getting along well."

Case II—(It will be noted that this case was operated on by another surgeon.). Shortly after her splenectomy, her temperature rose, her abdomen became tender and under the diagnosis of appendicitis, another laparotomy was done; the surgeon vaguely described an involved appendix and mesenteric glands due to it. Looking further, he found many mesenteric glands which he described as cancer. Ingalls[4] case of induced malarial infection in the treatment of dementia paralytica, where the spleen had previously been removed, not only recovered and was benefitted, showing the plausibility of the treatment, but gave evidence of a general lymph-gland enlargement, more so on account of the absence of the spleen—the brunt of resistance to the infection being taken by the reticuloendothelial system. The eight-year-old child, Case IV, and first cousin of the patient, Case II, who was operated on at the beginning of a hemolytic crisis, likewise exhibited a rise in temperature and abdominal tenderness, which subsided in the course of her recovery. Several authors, including myself, are aware that the restoration of erythrocytes is in these cases of hemolytic jaundice not a gradual process, but, on the other hand, very rapid, a million or more cells gained to the blood stream while the patient is on the table in the act of having the spleen removed. It would be interesting to be able to follow the changes, particularly in the bone marrow, lymph glands and liver under this sudden revolution brought about by the splenectomy. This autotransfusion and deluge of red cells into the blood stream is life-saving, as in Case V of this series, where the man was not only not benefitted by transfusions, but, as was remarked at the time: "He not only hemolysed his own red cells but those from other donors."

I say that further study of the entire reticuloendothelial system, bone marrow and liver, might aid us in establishing a more definite pathological ground-work for hemolytic jaundice, especially since the organ removed, while bulky enough—plenty of meat, in other words—shows so little in its histopathology. The fact that it shows so little beyond the engorgement with remnants of erythrocytes and their pigment is one of the most characteristic points in the pathology of the spleen in hemolytic jaundice. The liver and kidney are often as much pigmented, and the liver, as indicated in the photographs of Cases III and IV, father and child, is considerably enlarged before splenectomy, and of normal size four months after operation. It is likewise known that gallstones and evidence of cholecystitis figure high in cases of hemolytic jaundice.

Since the removed organ, the spleen, has so little to show for itself, pathologically, but since its removal usually brings about a cure of the case of the former syndrome suffered from, what then has stopped the destruction of red blood cells? Does their destruction, their deglobulization, depend upon their inherited or acquired quality of being more fragile? If their destructibility is dependent upon the erythrocytes' fragility, what is removed with the spleen to do away with the syndrome of symptoms formerly suffered by the patient, while the erythrocytes may still show sonsiderable fragility and may hemolize in hypotonic salt about as they did before operation? And finally, while congenital and acquired hemolytic jaundice are chronic and a certain amount of deglobulization is going on all the time, one of the characteristics of the disease is the attacks or crises of erythrocyte destruction,when the jaundice and anemia are more intense, when the liver and spleen are much larger, in fact, when the spleen is quite large, painful and sensitive, when the temperature rises several degrees. These crises subside and those who have acquired the disease early, like Cases II, III and IV, who have had it as far back as they can remember, and the father and cousin claim the child was born jaundiced, get along fairly comfortably and live well into maturity. What then determines the crises in these cases? Let it not be supposed that these crises are without danger. The reader will recall that Case I—the father, brother and uncle of Case II, III and IV—died while being prepared for splenectomy; that Case V barely saved his life by splenectomy, and that he and Case VI have lived fifteen and five years respectively in excellent health.

The spherocyte was first described by Naegeli, and he suggested that it was pathognomonic of hemolytic jaundice. Gansslen[8] made much the same observations.

Conclusions of Castle[9]:

"The following results suggest that differences in the susceptibility of various types of erythrocytes to hemolysis by hypotonic salt solution are due largely to differences in form, and not to differences in osmotic behavior.

"1. The percentage increases in equilibrium volumes in hypotonic plasma of erythrocytes of widely different susceptibilities to hemolysis do not show significant differences.

"2. Direct microscopic observations indicate that: a. Hemolysis of a given type of erythrocyte

is associated with the assumption of a spherical form in hypotonic plasma. b. The more susceptible the erythrocyte to hypotonic hemolysis, the less hypotonic is the plasma necessary to cause the assumption of a spherical form.

"3. An approximation to the percentage increase in volume necessary to cause hemolysis can be made by calculation of the percentage difference between the volume of the erythrocyte in isotonic plasma, V_o, and that of a sphere of equal surface, V_s.

Editor's Note.—These, and subsequent lower-case italicised letters, written with roman capitals, are to be read as *inferior* letters, *i.e.*, slightly depressed.

"4. In correlations of the relative degree of susceptibility to hypotonic hemolysis of a series of types of erythrocytes with their respective volume, diameter or surface in isotonic plasma, the erythrocytes of hypochromic anemia and of chronic hemolytic jaundice present exceptions.

"5. When such correlations are made on the basis of the diameter: thickness ratio, or when absolute values are calculated according to the formula, $\frac{V_s - V_o}{V_o}$, the erythrocytes of hypochromic anemia and of chronic hemolytic jaundice do not present such exceptions.

"6. Differences in the time necessary to cause hypotonic hemolysis of different types of erythrocytes may possibly be explained by differences in the percentage increase in volume of the discoidal form necessary to produce the spherical form in hypotonic solution."

Conclusions of William Dameshek[7], Steven O. Schwartz and Sonya Gross:

"1. Isohemolysins of the immune-body type were discovered in the serum of three cases of acute hemolytic anemia.

"2. Anti-guinea pig hemolytic serum was prepared by the injection of guinea pig red cells into rabbits. This serum possessed all the immunologic properties of the serum found in the clinical cases.

"3. Hemolysis of the red cells of the guinea pig *in vivo* followed the injection of this serum.

"4. By varying the dosage of the anti-guinea pig hemolytic serum, various types of hemolytic syndromes were produced: fulminating hemolytic anemia with hemoglobininuria, acute hemolytic anemia, and subacute hemolytic anemia.

"5. Various types of blood pictures could be reproduced at will: Microspherocytosis, increased erythrocyte fragility, reticulocytosis, 'pseudo macrocytic' blood picture, and so on.

"6. The spherocyte is a small, thick, red blood cell unaltered in volume though small in diameter, and unusually fragile to hypotonic salt solution. Our observations point to the conclusion that spherocytosis is due to the activity of hemolysin and not to an abnormal anatomic peculiarity or to a disturbed formation of cells in the bone marrow. Since increased fragility is a function of the increased thickness of the red cell, it is dependent upon the same cause.

"7. We believe that hemolytic syndromes are due to hemolysins, possibly of different types and present in different amounts, functioning slowly in some cases and violently in others. The various blood pictures of the hemolytic anemias, *viz.*, anemia, spherocytosis, increased fragility, reticulocytosis, are in all probability due to the effects of the varrying activity of hemolysins, and modified by the individual's power to react.

"8. Since the experimentally produced hemolytic syndromes and the numerous clinical types are closely comparable, the chief difference in the clinical syndromes may be a matter of the amount of functioning hemolysin present."

Surgery of the spleen has had its trials, as seen by the tables from the Mayo Clinic. Surgery now would be offered, in carrying out its greatest triumph, in the following conditions: Ruptured Spleen, Hemolytic Jaundice, Splenic Anemia and Hemorrhagic Purpura. The literature has again become replete with transverse incisions, instead of straight up and down, just as happened during the war period. The truth of the story is that we all have an incision to "bust wide open in our faces" occasionally, and then go about, as sort of an excuse, to show what we know about the abdominal wall. I am now anxious to show you some of my transverse incisions. Some of the spleens are so large that two transverse incisions run together by a connecting bar might be necessary to deliver it and restore the abdominal wall without a hernia. The reproach of a hernia is felt keenly by all surgeons, especially when secondarily repaired by a former assistant, now his most ardent opponent.

The trick of ligating the splenic artery, quite a large vessel, in gross splenic enlargements saves one the embarassment of hemorrhage, if not jeopardy to the patient.

On account of severe hemorrhages from the lower esophagus in splenic anemia (Banti's disease in the late stages) before and after a splendid result from splenectomy, it has been suggested that the coronary vein be tied to lessen the venous turgescence by breaking the communication with the portal circulation.

To promote addition collateral circulation, which, in fact, is Nature's means of relieving portal obstruction, some form of omentopexy might be done,

such as that of the Thalma-Narath or the modification done by Pemberton.

Conclusions

1. Hemolytic jaundice is an entity and should be easily recognized behind the following syndrome: acholuric jaundice, enlarged spleen, anemia, crises with pain and fever, increased fragility of the red cells, increase of reticular cells, urobilin but no bilirubin in the urine, normal colored stools, increased icterus index, negative direct van den Berg with positive indirect van den Berg reaction, and absence of itching. The congenital or familial type may embrace all cases.

2. The blood picture: "We believe that hemolytic syndromes are due to hemolysins, possibly of different types and present in different amounts, functioning slowly in some cases and violently in others. The various blood pictures of the hemolytic anemias; *viz.*, anemia, spherocytosis, increased fragility, reticulocytosis, are in all probability due to the effects of the varying activity of hemolysis, and modified by the individual's power to react."

3. Splenectomy offers its greatest triumph in the treatment of a. ruptured spleen, b. splenic anemia (late stage Banti's disease), c. hemolytic jaundice, and, d. purpura hemorrhagica. There are few operations as dramatic as splenectomy for hemolytic jaundice and for purpura hemorrhagica, where in the one instance there may be a gain of a million red cells and in the other a stopping of bleeding while the patients are still on the operating table.

—210 Professional Building.

Bibliography

ARTICLES READ IN THE PREPARATION OF THIS PAPER

I: Immediate Reference:

Surgery of the Spleen by Dr. Eugene H. Pool and Dr. Ralph G. Stillman

1. DOAN, DR. CHAS. A.: Pathological Physiology of the Spleen etc., *Northwest Med.*, 37-61, (March) 1938.
2. NESLER, DR. A. B.: Chronic Hemolytic Jaundice, etc., *Journ. Iowa State Med. Society*, 28: 103 (March) 1938.
3. SHARP, DR. JNO. C. and DAVIS, DR. HERBERT H.: Severe Reactions following Transfusion in Hemolytic Jaundice, *Journal A.M.A.*, Vol. 110, No. 25, June 18, 1938.
4. INGALLS, DR. R.S.: Patient Treated for Dementia Paralytica by Induction of Malaria, *Journ. A.M.A.* Vol. III, No. 8, August 20, 1938.
5. GANSSLEN, DR. M., and DEUTSCHE, DR.: *Arch. f. Klin. Med.* 1922.
6. CASTLE, DR. W. B., and GOLAND, DR. GENEVA: *American Journal Physiology*, Vol. 120, October, 1937.
7. DAMSHEK, DR. WILLIAM, SCHWARTZ, DR. STEVEN O., and GROSS, DR. SONYA: *American Journal Med. Sciences*, Vol. 196, No. 6, December, 1938.
8. DECICHEN, DR. H.G.: Hemolytic Icterus and Ulcers of the Lower Leg, *Acta Medica Scandinavica* 77: 411-430 (May 6) 1931.

II: Principal Reading:

DOAN, DR. CHARLES A.: Pathologic Physiology of the Spleen. Rationale of Splenectomy in Congenital Hemolytic Icterus, Thrombocytopenic Purpura and Early Banti's Disease. *Northwest Medicine*, 37:61 (March) 1938.

NETOUSEK, DR. MILOS: So-Called Hemolytic Jaundices. *La Presse medicale*, 46:675 (April 27) 1938.

RASTETTER, DR. J.W. and MURPHY, DR. FRANCIS D.: Acquired Hemolytic Jaundice, *Amer. Journal of Digestive Dis. and Nutrition*, 4:805 (February) 1938.

NESLER, DR. A. B.: Chronic Hemolytic Jaundice; Cure by Splenectomy. *Journal of the Iowa State Medical Society*, 28:103 (March) 1938.

COHN, DR. ISIDORE: The Differential Diagnosis and Surgical Indications of Splenomegaly, *Southern Medical Journal*, 31:486 (May) 1938.

LAUDA, DR. E.: The Role of the Spleen in the Diseases of the Blood, *Klinische Wochenschrift*, 16:977 (July 10) 1937.

CUSTER, DR. R.P.: Acquired and Congenital Hemolytic Jaundice. (Review of the *North Am. Literature* for 1929 and 1930).

REIFENSTEIN, DR. EDWARD C. and ALLEN, DR. ELLERY G.: The Treatment of Chronic Hemolytic Jaundice with Liver Extract, *J.A.M.A.*, 103:1668 (December) 1934.

FAURE-BEAULIEU: Is There an Authentic Hemolytic Jaundice? *Rev. crit. de path. et de therap.*, 1:101, 1930.

THOMPSON, DR. W. P.: Hemolytic Jaundice, *J.A.M.A.*, 107-1776, 1936.

HADEN, DR. RUSSELL L.: The Mechanism of the Increased Fragility of the Erythrocytes in Congenital Hemolytic Jaundice, *The American Journal of the Medical Sciences*, 188:441 (October) 1934.

BENHAMOU, DR. ED.: The Diagnosis of Hemolytic Jaundice. *Paris Medical*, 23:126 (August 5) 1933.

WISE, DR. WALTER D.: Hemolytic Jaundice, *The American Journal of Surgery*, 20:722 (June) 1933.

SILBERBERG, DR. M.: The Remote Results of Splenectomy in Hemolytic Icterus, *Archiv fur klinische Chirurgie*, 171:568 (August 17) 1932.

WARFIELD, DR. LOUIS M.: Congenital Hemolytic Jaundice. *The Wisconsin Medical Journal*, 30:895 (November) 1931.

PEMBERTON, DR. JOHN deJ.: Results of Splenectomy in Splenic Anaemia, Haemolytic Jaundice, and Haemorrhagic Purpura. *Annals of Surgery*, 94:755 (October) 1931.

MAYO, DR. WILLIAM J., and MAYO, DR. CHARLES H., Splenomegaly, (Collected Papers Mayo Clinic, 27:-555, 566, 1935).

DEDICHEN, DR. H. G.: Hemolytic Icterus and Ulcer of the Lower Leg, *Acta Medica Scandinavica*, 77:411-430 (May) 1931.

SJOVALL, DR. E., and IVARSON, DR. G.: Significance of Splenic Changes in Familial Hemolytic Icterus, *Finska lakaresallskapets handlingar*, 71:886 (November) 1929.

III. Collateral Readings

BESSIE, DR. EVERETT M.: Primary Splenomegaly of the Gaucher Type; With Report of a Case Successfully Splenectomized, *Medical Record*, 145:403 (May 19) 1937.

HANSEN, DR. K.: Enlargement of the Spleen as a Diagnostic Problem; Casuistic Contribution. *Deutsche medizinische Wochenschrift*, 63:484 (March 19) 1937.

DE NEGRI, DR. U.: Treatment of Malarial Splenomegaly According to the Method of Naurizio Ascoli, *Policlinico (sez. prat.)*, 43:2158 (November 30) 1936.

CARLING, DR. E. ROCK: Splenomegaly, *British Medical Journal*, No. 3941:109 (July 18) 1936.

DE LANGE, DR. CORNELIA, and WOLTRING, DR. L.: Multiple Skeletal Anomalies, Hepatosplenomegaly and Mental Deficiency, *Acta Paediatrica*, 19:71 (September 30) 1936.

DIENTST and HAMPERL, H.: A Case of Lipoid Cellular Splenohepatomegaly of the Neimann-Pick Type, *Wien. med. Wchnschr.*, 40:1432, 1937.

LANGSTON, DR. WANN: Hemolytic Icterus with Infantilism, *Southern Medical Journal*, 28:316 (April) 1936.

HERTZ, DR. W.: Metabolic Diseases in Childhood, *Arch. f. Kinderh.*, 104:106, 1935.

SMITH, DR. R. M., and FABER, DR. S.: Splenomegaly in Children with Early Hematemesis, *J. Ped.*, 7:585, 1935.

BRUNSON, DR. C. W.: Hemolytic Jaundice; Report of Two Unusual Cases With Results Following Splenectomy, *United States Naval Medical Bulletin*, 32:441 (October) 1934.

MACHADO, DR. O.: Splenophepatic Syndrome Associated with Anemia and Jaundice, *Arch. de med. inf.*, 1:438, 1932.

DIVIS, DR. JIRI: Tuberculous Splenomegaly, *Casop. lek. cesk.*, 71:168 (February 5) 1932.

SANTA, DR. PAUL: Hemolytic Jaundice, *J. de chir.*, 40:546, 1932.

MICHELI, DR. F., and DOMINICI, DR. G.: Research on a Form of Congenital and Familial Hemolytic Jaundice with Atypical Bilirubinemia, *Sang.*, 6:953, 1932.

VAN RAVENSWAAY, DR. A. C., and VAN RAVENSWAAY, DR. ALEX.: Hemolytic Jaundice Unimproved by Splenectomy with Ultimate Remission Following Liver Therapy, *The Journal of the Missouri State Medical Association*, 31:198 (May) 1934.

FERRINGNO, DR.: Ligature of the Vascular Trunk Leading to the Spleen and Its Influence on the Evolution of Hemolytic Icterus Produced by Phenylhydrazin, *Studium*, 22:33-38 (February 1) 1932.

DURANTE, DR. L.: Treatment of Hemolytic Icterus by Ligature of the Splenic Artery and Splenectomy, *Minerva med.*, 22:504 (March 31) 1931.

NEUBURGER, DR. J.: Failure of Liver Therapy in Hemolytic Icterus, *Deutsche medizinische Wochenschrift*, 57:1298-1300 (July 31) 1931.

DAWSON, DR., of Penn: Haemolytic Icterus, *The British Medical Journ.*, 3674:963 (June 6) 1931.

DE SEMIBUS, DR. MARIO: A Case of Recidivating Hemolytic Icterus in Pregnancy, *Clin. ostet.*, 33:762-767, 1931.

PASCHKIS, DR. KARL: Hemolytic Icterus (Is There an Acquired Form of Hemolytic Icterus?) *Wiener klinische Wochenschrift*, 43:166-168 (February 6) 1930.

CAUDIER, DR. H., and GERNEZ, DR. CH.: A Case of Congenital, Hemolytic Jaundice Treated and Cured by Splenectomy, *Bulletins et Memoires de la Societe Nationale de Chirurgie*, 55:374-376 (March 9) 1929.

GIANNINI, DR. G.: Hemolytic Icterus and Its Possible Treatment, *Terapia*, 19:65-73 (March) 1929.

MANAI, DR. ANDREA: Hemolytic Icterus Due to Plasmochin, *Il Policlinico (sez. prat.)* 34:1215-1217 (August 26) 1929

OHNO, DR. YUKIZO: Is There a Genuine Hemolytic Jaundice? *Klinische Wochenschrift*, 8:2188-2191 (November 19) 1929.

SILVESTRI, DR. T.: Concerning the Ligature of the Splenic Artery in Hemolytic Icterus, *Il. Policlinico (sez. prat.)*, 36:1513 (October 21) 1929.

VALDONI, DR. P.: Treatment of Hemolytic Icterus by Means of Ligature of the Splenic Artery. Indications, Surgery and Experimental Research. *Il. Policlinico (sez. chir.)*, *Roma*, 36:137-172 (March 15) 1929.

McNEE, DR. J. W.: Splenomegaly in Britain. Investigations Into the Etiology, Pathology, and Relative Frequency; with a Tentative Classification, *Glasgow M. J.*, 111:65, 1929.

PICK, DR. L.: Lipoid Cellular Splenohepatomegaly *Verhandl. d. Gesell. f. Verdauungs u. Stoffwechselkr.*, 8: 134, 1929.

FRUGONI, DR. CESARE: Gastrorrhagias in the Course of Thrombophlebitic Splenomegaly, *La Presse medicale*, 37:33 (January 9) 1929.

PREIDT, DR. HERMINE: Hemolytic Icterus as an Effect of Accident, *Muenchner medizinische Wochenschrift*, 78:1298-1300 (July 31) 1931.

Discussion

Dr. W. H. Prioleau, Charleston:

I regret very much Dr. Allan's absence, as I do not feel as well qualified to discuss Dr. Brenizer's paper.

It is unusual for one individual to be so fortunate as to have had six cases of hemolytic jaundice under his care. The presentation clearly sets forth the relationship between certain of the cases, thus demonstrating the important familial factor in the disease. That there is also an acquired form of the disease I think is generally held. An interesting and important point is that the presence of the familial form may be consistent with good health, in which case the disease may be overlooked unless a careful study of the blood be made. The course of the disease is frequntly characterized by crises; that of the acquired form is generally more rapid and severe. These features were brought out in the cases reported. The presentation of the subject of hemolytic jaundice by Dr. Brenizer has been interesting and valuable, not only in regard to the subject itself, but also in making us mindful of the other types of splenic disorders.

Dr. Paul W. Sanger, Charlotte:

The method which Dr. Brenizer prescribes for controlling hemorrhage in splenectomy; namely, applying a tourniquet to the splenic artery near its origin, has a doubly favorable action. As we all appreciate, the enlarged spleen in the hemolytic jaundice is filled with a tremendous quantity of blood: immediately upon applying a tourniquet, the spleen dramatically diminishes in size, and thus the patient has the aid of autotransfusion.

Another point that is well worth remembering is to give 1 c.c. of adrenalin before clamping the pedicle of the spleen; *i.e.*, when it is not necessary to isolate and apply a tourniquet to the splenic artery, as one wishes to salvage all the blood possible.

At this time I would also like to report 4 cases of hemolytic jaundice. In short their records were as follows:

A boy, aged 9 years, weak, pale, vomiting, intermittent jaundice for 5 years. Icteric, marked splenic and hepatic enlargement, patient desperately ill, r.b.c. 1.8, hgb. 22%, fragility test—began 725, completed before 450. Control 450-350. Van den Berg—indirect. Index-15. Recticulocyte count, 22%. Pt. had two transfusions. Splenectomy-9.50 grs. P.O. fragility test—unchanged. Pt. discharged 21 days after operation. Note: This chart note read: "The boy entered ward 6 weeks ago dying and left today with color in his cheeks, on his feet,, and happy. A most gratifying cure." Pt. Blood Type III.

A girl, aged 11 years, pale, asked to come in for study. Been pale for years, occasionally eyes have been noted to have yellowish tinge, occasional complaint of abdominal pain. Pallor, yellow sclerae, enlarged heart, enlarged tender spleen, r.b.c., 3.5 hgb. 70%. Van den Berg—indirect. Recticulo—7.2. Fragility test—625. Control 475. Splenectomy. P.O. fragility—unchanged. Discharged 17 days afterward with r.b.c. 4.2, hgb. 83%, ret. less than 1%. No urobilin.

Girl, aged 3 years, 8 months, pale yellow tinge to eyes, weak. Pt. had never been up to par. The yellowish tinge to her eyes had been fleeting. Marked pallor, icteroid tint of sclerae and skin, marked splenomegaly, r.b.c. 1.9, hgb. 33%. Type III. Splenectomy. Pt. discharged apparently cured.

Girl, aged 1 year, 5 months, admitted for study. Nothing essential in her history. Skin was clear but there was a definite splenomegaly. R.b.c.—4. Type III. Discharged to be followed.

It is significant to note that the fifth child presents no symptoms and no findings suggestive of this malady. Dr. W. B. Bradford felt that there was possibly some blood grouping connection in these cases that might be responsible for their plight in that all 5 of the children were in Blood Group III. He was able to corral the entire family on the mother's and father's sides four generations back. He took with him two technicians and they made routine physical examinations, typed their blood, obtained hemoglobin, urobilin, fragility test and recticulocyte count. Of these 14 persons only the children's mother showed an increase in recticulocytes, urobilin and fragility. However, the great-grandmother told of members of the third generation who died after long weakness from an unknown disease characterized by paleness and jaundice. There were also a few members who were supposed to have had gallstones.

On the paternal side there were no suggestive laboratory findings. There was no history of anemia, splenomegaly, jaundice, or gallbladder disease. It was interesting to note that the blood of the father of these children was Type III and that of the mother Type IV.

I would like to comment on the unfairness of the statistical surgical mortality in performing splenectomies for hemolytic jaundice and thrombocytopenic purpura. As Dr. Johnson just stated these people do not choose to be operated on during their remissions nor ordinarily at this time do the attending physicians encourage operation. Only during the exacerbation when they are practically in extremis are they willing for surgery, and if the operative chance were not taken at this time the mortality would be 100%; however, when they are operated (merely as a life-saving measure) the mortality is relatively low.

Dr. Francis B. Johnson, Charleston:

Dr. Brenizer's interesting presentation of hemolytic jaundice has been listened to with a great deal of pleasure by all of us. This disease in its active form is by no means common and unless adequate laboratory methods for determining spherocytosis, an increased fragility of red blood cells, reticulocytosis, and evidence of increased bilirubin formation and anemia are used, the diagnosis can not be made positively. Whether we have such a condition as acquired hemolytic icterus is open to doubt as Dr. Brenizer states—Vaughn, Dawson, Doan and others question it. Vaughn reports that in all of her cases in which it was possible to examine the patient's family, increase red cell fragility and spherocytosis was found in one or more members, though perhaps, showing no other evidence of the disease. This can be considered a latent trait as is the sicklemia trait to active sickle-cell anemia. In hemolytic icterus we have the red cells as they mature becoming spherical—spherocytosis—instead of the usual biconcave discs. The resistance of this type of cell to hypotonic salt solution is lower than that of the normal cell. There is increased fragility and in consequence more rapid destruction. In spite of the spectacular relief of the symptoms of anemia and jaundice by splenectomy, the spherocytosis and increased fragility of the erythrocytes are not materially altered.

The severity of the disease can not be judged, however, by the increased fragility. In some cases with only moderately increased fragility the symptoms are more evident than in others with a marked increase. Dr. Brenizer brings up the point as to whether there is an active immune type of hemolysin produced in hemolytic jaundice that destroys the cells of the patient and normal cells transfused in these cases. Reactions are recognized as more frequent in these cases but they do not occur consistently.

Dr. Brenizer presents the conclusion of Damshek, Schwartz and Goss and from this expresses the belief that the spherocytosis is due to the activity of the hemolysin and not to an abnormal anatomic peculiarity in the formation of the red cells in the bone marrow. The change in shape is not evident in the immature cell.

While the blood picture in these cases usually shows a microcytic picture with a low volume index, at times it may be altered so that the evidence of a macrocytic hyperchromic anemia is present which may be confusing with pernicious anemia. We have a case of hemolytic jaundice in the Roper Hospital that at first gave the microcytic hypochromic picture but now shows a macrocytic picture. This is a white man 58 years old, who dates the onset of his symptoms from his 13th year. Symptoms disappeared in 3 years. He remained in good health for 44 years, until March, 1938, at which time abdominal swelling and jaundice reappeared and he was admitted to the hospital. His blood examination showed hgb. 5.5 grams (37%), r.b.c. 2.47 mil., m.c.v. 88 c. microns, c.i. 0.74, m.c.h. 22 m. micrograms, a normal white and differential count, a volume index 0.94, a reticulocyte count of 38.4, fragility 0.84-0.40 (control 0.46-0.32), icterus index 27, delayed and indirect van den Bergh positive with 1.85 mg. bilirubin. He refused operation and was discharged without decided improvement. Was followed as an out-patient during the summer. X-ray treatment tried with no result. He was readmitted in August, 1938. His red cell count varied from 1.64 to 2.55 mil. hgb., 7.5 grams (46%) to 9.5 grams (58.5%). Fragility same as before. After nine transfusions, having had two moderately severe delayed reactions, he was discharged with slight improvement, refusing operation.

On February 8th, 1939, he was readmitted having given consent to operation. Hgb. 8 grams (53%), r.b.c. 1.88 mil., v.i. 1.66, m.c.v. 152 c. microns, c.i. 1.44, m.c.h. 43 m. micrograms, s.i. 0. 80, m.c.h.c. 28%, reticulocytes 28%, icterus index 57, van den Bergh shows 2-plus direct, 4-plus delayed direct; obstruction probably due to stone, bilirubin 2.92 mgs.

His heart is at present fibrillating so markedly that it is a question if operation is advisable.

Dr. A. G. Brenizer, closing:

Because of his wide experience at the Mayos I am going to ask Dr. Pemberton if he will replace me please.

Dr. Pemberton had already left the hall.

In 1836, the Massachusetts Medical Society advertised for 1,000 best leeches for which it would pay $500.00.

A Review of Two Hundred Consecutive Operations Upon the Thyroid Gland*

William H. Prioleau, M.D., Charleston, South Carolina

THE purpose of this paper is to review certain phases of diseases of the thyroid gland in a series of 206 consecutive major operations upon 195 patients. All of these patients were operated upon in Charleston; 66 were from Charleston and its immediate vicinity, 104 from the territory around Charleston within a radius of 100 miles, and 25 came from more distant places. In this series of cases from a region in which thyroid disease is relatively rare, presumably on account of the iodine content of the soil, it is of interest to note that the incidence of the various types of thyroid disease is essentially the same as that in regions where thyroid disease is common. This applies also to the negro race in which there occurs a very severe form of exophthalmic goiter. That there are only 24 negroes in this series of 195 patients is explained in part by the fact that the negroes were from only the immediate vicinity whereas the white patients came from a greater radius. Also negroes are less apt to seek medical attention unless their illness is distinctly incapacitating. In spite of this it seems likely that the incidence of thyroid disease in this community is less in the negro than in the white race. In the 195 patients there are 173 females and 22 males, a ratio of 8 to 1.

In 160 cases there was clinical evidence of hyperthyroidism. In 39 cases pressure symptoms were predominant; in 10 of these the goiter was intrathoracic either in whole or in part. In 98 cases there was a diffuse enlargement of the thyroid gland, and in 86 cases there was a nodular enlargement. There were 5 cases of carcinoma, 3 cases of chronic or subacute infection and 3 of thyroglossal duct cysts.

In diagnosis main reliance was placed upon the history and physical examination rather than upon laboratory tests. During the past few years blood cholesterol determinations have been made. In pronounced hyperthyroidism the values have been low and in marked thyroid deficiency they have been high; but in the large intermediate group they have not been sufficiently characteristic to have been of assistance in diagnosis. The basal metabolic rate is of great value but is not to be relied upon to the exclusion of the other findings. The elevated basal metabolic rate is only one factor in hyperthyroidism—as is nervousness, as is rapid heart action and as are other symptoms, any one of which may not be present. It is not infrequently within normal limits when other signs indicate the presence of a definite hyperthyroidism which is later confirmed by the relief following thyroidectomy. Particularly in cases of nodular goiter, of long standing, with mild hyperthyroidism, insidiously affecting the heart and nervous system, is the basal metabolic rate little if any elevated. Likewise the basal metabolic rate may be elevated in conditions other than hyperthyroidism.

NO. PATIENTS 195		NO. OPERATIONS 206
White	171	
Colored	24	
Males	22	
Females	173	
Charleston and Vicinity	66	
100 Miles from Charleston	104	
Elsewhere	25	
Lobectomy (adequate)		7
One-stage		178
Two-stage		10
Thyroidectomy		
Thyroglossal		3
Infection		3
Carcinoma		5
Nodular Enlargement		86
Diffuse Enlargement		98
Thorax		10
Neck		29
Pressure Symptoms		
Hyperthyroidism		160
Recurrent Nerve Paralysis, unilateral,		
Temporary	5	
Permanent	3	
Recurrent Nerve Paralysis, Bilateral		
Temporary	1	
Permanent	0	
Tetany, Temporary	1	
Recurrence	1	
Death	1	

In this series thyroidectomy was performed in cases of diffuse or nodular enlargement of the thyroid gland with a clinical picture of hyperthyroidism, and in cases of nodular goiter with evidence of pressure disturbances in the neck or in the thorax. No patient was refused operation on account of the severity of the hyperthroidism, the condition of the heart or the degree of tracheal obstruction. In seven cases the disease process was confined to one lateral lobe and accordingly the operation was limited to the affected lobe. In cases of infection and cancer operations were performed for diagnosis, drainage and relief of pressure, as indicated. In

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

three cases thyroglossal duct tracts were excised.

In a number of cases thyroidectomy was performed for hyperthyroidism in the presence of associated diseases, such as arterial hypertension, rheumatic heart disease, diabetes mellitus and neurocirculatory asthenia. It is in this group that the death in this series occurred. Whereas these patients were benefitted by the relief of the hyperthyroidism, the associated disease was not directly alleviated, except in the case of diabetes.

In cases of hyperthyroidism a subtotal thyroidectomy was performed leaving only a small strip of thyroid tissue on each side of the trachea. In cases of large nodular goiter the removal was not as radical, though care was taken to deliver the upper and lower poles so as not to leave a mass of tissue at these sites. Great care was taken to preserve the posterolateral capsule by clamping and dividing the blood-vessels as they course over the surface of the gland; the ligation of the vessels at the poles was sedulously avoided. Except in cases of very large goiter and carcinoma the prethyroid muscles were not divided transversely as this was not necessary for adequate exposure, and in case of a wound complication causing separation of the muscle ends there owuld likely result a deformity of the neck.

Generally speaking, the more radical the removal of the gland the less likelihood of a recurrence, but the greater the incidence of recurrent laryngeal nerve injury and parathyroid tetany. True recurrence must be distinguished from persistence from too much thyroid tissue being left at operation. In several cases in this series there appeared some months after operation a small nodule of thyroid tissue and, along with it, symptoms of mild hyperthyroidism. These disappeared upon treatment with iodine, except in one case in which an operation was required. This patient had had a very severe hyperthyroidism requiring a thyroidectomy in two stages. In 4 of the 6 cases of recurrent hyperthyroidism having had their first operation elsewhere there was a mass of thyroid tissue at the upper pole covered with an intact capsule, indicative of the fact that a resection of this region was not performed at the first operation.

A few words concerning suture material are in order. Undoubtedly the best wound healing is obtained with the proper use of silk; however, should wound infection supervene, the silk knots are likely to be extruded over a period of months—a very trying procedure. The use of plain catgut results in more wound reaction and serum formation; however, it gives no trouble in case of infection. Fine chromic catgut causes a less wound reaction and serum formation, but the knots may be extruded. It would likely give trouble in case of infection.

Consideration of injury to the recurrent laryngeal nerves deserves an important place in the discussion of the technic of thyroidectomy. There were 5 instances of temporary paralysis and 3 of permanent paralysis of one recurrent laryngeal nerve. In no case was there a bilateral permanent paralysis; however in one case tracheotomy was necessitated on account of a transient bilateral paralysis. In this series protection was afforded by avoiding undue traction upon the gland, by not placing forceps at the poles, and by keeping the operation intracapsular in the posterolateral regions. It is the opinion of the writer that a common cause of recurrent laryngeal nerve injury is traction upon the nerve at the lower pole, and at the point where the nerve enters the larynx, due to its firm attachment to the capsule of he gland. When operating under local anesthesia voice changes, noted when traction is being placed upon the gland, generally disappear upon release of the traction. In this respect local anesthesia is a distinct safeguard against nerve injury. Only lately has the writer protected these nerves by first identifying them as advocated by Dr. Lahey, of Boston. Until recently it has been generally held that the dissection for the identification of these nerves would in itself often result in harm to them.

Parathyroid tetany is a serious complication of thyroid surgery and every precaution must be taken to prevent it. In this series the parathyroid glands were safeguarded by avoiding the sites of their usual location. To isolate them would be time-consuming and not unlikely would result in injury to them or their blood supply. By avoiding their usual sites it is likely that several intact parathyroid bodies will remain, though abnormally placed ones might be removed. In support of this method of protecting them is the fact that in this series there resulted no case of severe chronic parathyroid tetany. One patient with severe hyperthyroidism, who had had elsewhere two previous operations upon the thyroid gland, had one severe tetanic convulsion several weeks after operation. Following this she had evidence of mild tetany, which was well controlled by calcium and vitamin D. In both sexes there were several cases of mild tetany as evidenced by muscle cramps, tingling of fingers and toes, and a positive Chvostek's sign. In these mild cases the blood serum calcium was within normal limits. In a few cases there resulted loosening of the teeth, likely an associated disturbance of calcium metabolism.

In this series of cases there was one death—a mortality rate of about ½ of 1%. It occurred a

few hours after operation in an obese woman 50 years of age with arterial hypertensive disease. The death was attributed to sudden heart failure; post-mortem examination was not obtainable. The low mortality rate in this series is attributed in great part to the use of the multiple-stage operation—a procedure used in 10 patients. It was resorted to on account of one or more of the following reasons: the severity of the hyperthyroidism, the low cardiac reserve, and technical difficulties in performing the operation. Most of these operations were done under local anesthesia—in some nitrous oxide was added for short periods—thus adding to the safety of the operation in that the condition of the patient is better determined, the operation must be done very gently, and a certain type of recurrent laryngeal nerve paralysis resulting from traction can be better avoided.

Summary

1. In a review of 200 major operations upon the thyroid gland certain phases of thyroid disease are considered.

2. Of the 195 patients 170 came from Charleston and the neighboring region, a district in which thyroid disease is relatively uncommon.

3. Statistical data are given concerning the types of the disease.

4. In the series were one death, one recurrence, one case of transient tetany, three cases of permanent and five of temporahy unilateral recurrent laryngeal nerve paralysis.

Discussion

Dr. Addison G. Brenizer, Charlotte:

Dr. Prioleau reviews the results of 206 operations he has done on 195 patients with involvement of the thyroid gland. All but 25 were from Charleston and the immediate surroundings. For years I have shown a picture of three children not only born in the iodine state of South Carolina, but born where they were fanned to sleep by the iodized sea air at Myrtle Beach. All over North and South Carolina, the nodular goiter (adenoma), toxic and nontoxic, and the diffuse goiter (thyro-toxemia), of the Graves type are common. What is present in Switzerland and on our Great Lakes is the diffuse parenchymatous type or the adenomatosis, which is rare with us, only an occasional case seen. I once attended a goiter Congress in Memphis, the metropolis of what is thought not to be a goiter producing section, but 420 cases presented themselves for examination and treatment.

When I make the statement that I have operated on nearly 7,000 cases of goiter in Charlotte, N. C., I think I am frequently disbelieved, and I rarely give the figures. Israel Braum in his book, The Non-Surgical Treatment of Exopthalmic Goiter (Thyro-Toxemia), says that it does not occur in the Negro. That statement would be about like mine in regard to grey mules. They say they do not die, but dry up and blow away. I've never seen a dead grey mule and maybe never will.

I am glad Dr. Prioleau finds the proportion of male to female to be 1 to 8 or 10, as I do. I have had only about 700 men. In Switzerland and on the Great Lakes, the two sexes come closer together.

In 160 of Dr. Prioleau's cases, there was clinical evidence of thyrotoxicosis—98 diffuse, 86 nodular. I think, just as the American Association for the Study of Goiter does, that the word "goiter" should not occur along with the terminology of Graves (Basedow, Flajani) disease, but that it should be called merely thyrotoxemia, diffuse. The whole development, syndrome and pathological physiology is very different from what we think of as goiter.

I am glad that Dr. Prioleau stated that he did not rely on basal metabolic rates to the extent he did formerly. I believe that one can sift out the cases of neurovascular asthenia about as readily without a b.m.r. determination as he can with one. There is not the slightest doubt, at a glance, as to the extreme of either condition. One who has a neurovascular asthenic type may develop thyrotoxemia, and show exophthalmos, hard enlargement of the thyroid, elevated systolic pressure, fast heart, tremor etc., and after operation return to the old unstable, low blood pressure (lower on standing), tachycardia patient of old. I have never quite followed Dr. Crile in his treatment of both hyper- and hypo-tensive cases by the attempted removal of the celiac ganglion.

Dr. Prioleau likely does a very radical operation in thyrotoxemia (Graves type), as I do. The lobe-splitting operation, which I described in *Annals of Surgery* several years ago, aids one greatly both in viewing post-tracheal projections and in sparing most recurrent laryngeal nerves and parathyroids. I rarely demonstrate the recurrent laryngeal nerves and parathyroids except in total thyroidectomy of which I have done only 10.

In this series of 195 cases of Dr. Prioleau, he has had but one death, a mortality of about ½%! He might well have gone on then to 600 instead of 200 without another death. It is perfectly evident that he knows how to handle his goiters and, unless something extraordinary happens, he may carry his numbers high in the scale before he gets another death. As Dr. Prioleau's ancestors would have said: "Il connais ces petits choux" (He knows his little cabbages, or, he knows his stuff).

Dr. R. B. Davis, Greensboro:

I think Dr. Prioleau finished the chapter, and Dr. Brenizer came along and finished the summary. What is there left for me to say?

The preöperative treatment we all recognize as being the thing that held Dr. Prioleau's mortality rate to such a low figure. I have seen nothing anywhere to equal it! I think the pre-operative examination of the vocal cords is very important. If one does have pressure symptoms and horseness by all means have vocal cords examined before operation, because it may be that they are already affected. This may avoid a suit later! Certainly the two most important treatments are rest and iodine. It is not an easy thing to keep a patient at rest in a hospital before operation. The patient and her husband very often object to the expense. They do not see the necessity of it. All I have to offer are the following: Examination of vocal cords and stressing of preöperative treatment.

Dr. W. H. Prioleau, closing:

I appreciate greatly the kindly discussions given my paper and I shall, in all modesty, strive that those who prophesy good things for my patients not be shown to be false prophets. In regard to the preöperative examination of the vocal cords I have often asked the husbands if they wouldn't like a little something done about the functioning of these organs. As to the basal metabolism test it is a shame that we can not rely on this.

Two cases of bubonic tularemia of the groin transmitted by tick bites have been reported.

Tuberculosis Fads, Fallacies and Facts*

J. Donnelly, M.D., Charlotte, North Carolina

ALTHOUGH tuberculosis has dropped to seventh place in the list of causes of death the disease is still of vast economic importance. The number of deaths from this cause in the registration area of the United States in 1937 was no less than 57,000, and a number which can be materially reduced by proper application of the knowledge we have of this disease. As you know, no specific cure for the disease has been found. We know, however, the pathological changes in the body caused by the infection and its methods of transmission, and we are familiar with the necessary procedures for diagnosing the condition; but, in spite of this knowledge, early infection is rarely found and the institution of effective treatment is often too late to be of benefit. There is probably no disease for which more worthless remedies have been offered to the public, and there are still many fallacies concerning it which have become rather widespread beliefs.

Although tuberculosis can be found in all strata of society, it is notably a disease of the poor. Hence, the majority of patients in need of such care are unable to pay for that care. A recent National Tuberculosis Association report shows that three-fourths of the expense of maintenance of the sanatoria in the United States comes from public money.

Of particular interest to the people of the South is the prevalence of tuberculosis among Negroes. Although the death-rate from the disease in this race has been materially reduced in the past 15 years, it is still three to four times that of the whites. Practically all the laborers and house-servants in the South are Negroes. The Negro belongs to the low-wage class and, consequently, is never able to prepare himself financially for emergencies. Therefore, the expense of his tuberculosis must be provided largely from public funds. Any program for the betterment of health conditions among Negroes should interest all whites, because infectious processes in the Negro are an ever-present danger to the family of his white employer.

The two factors that most hinder rapid reduction in the morbidity and mortality rates of this disease are, (1) failure to recognize the disease in its earlier stage, and (2) the continuance of poor environmental conditions. In spite of the fact that early diagnosis has been stressed in National Tuberculosis Association campaigns for many years, at least two-thirds of the cases when first seen by the physician are moderately or far-advanced. This is through no fault of the physician, as a rule, because many patients ill from tuberculosis do not seek medical advice until they are physically unable to work. The more widespread use of the tuberculin skin-test in routine examinations, particularly in children and young adults, is the most valuable, the simplest and the cheapest of our diagnostic procedures. A positive skin-test indicates that there has been contact at some time with an open case of tuberculosis, and that there has been a primary infection somewhere in the body, although the location of that primary focus is sometimes very difficult and often impossible.

Fortunately primary infections as a rule heal without treatment; but, by the production of sensitization of the tissues to the tuberculo-protein, they render the individual more liable to the re-infection form of the disease, which is the dangerous form. This re-infection may be endogenous or exogenous. Primary infections are usually asymptomatic and non-transmissible, 97% of them healing and causing no further trouble during life. Furthermore, even when primary infections are recognized, sanatorium treatment is unnecessary. Such cases do quite as well at home as in an institution, and they do quite as well following their usual activities as they do on bed-rest. It is unnecessary to keep a child with a primary tuberculous infection from school, because the condition is as a rule non-infectious and it has a tendency to heal spontaneously.

It is the usual custom in the skin-testing of children to make x-ray examinations of all positive reactors in order to locate if possible the primary focus. Records indicate that this can be done in not over 25% of reactors; but, there is no particular advantage in knowing its exact location. The positive skin-test indicates that there is tubercle formation, that the child is allergic to the protein of the tubercle bacillus and hence is in danger of eventually contracting the re-infection type of the disease if further exposure to infection is permitted. Adolescents and young adults who are negative to the first skin-test should be subsequently tested at least once a year. This is particularly necessary in the Negro race. It is well to remember that the re-infection type of disease in a transmissible form is rare before adolescense, but the search for the

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

adult open cases among all contacts of positive reactors is the important part of such work. My own records of the skin-testing of school children over a period of many years indicates that less than 50% of the positive reactors give a history of contact, in spite of the fact that the reaction is conclusive evidence that there has been such contact. Segregation of active cases in a sanatorium when found, so that further infection of contacts may be prevented, or at least lessened in frequency, is advocated by most writers on the subject. There are 92,786 beds in 749 institutions for tuberculous patients in the United States, with about 700,000 active cases of the disease to occupy them; so it is plain that the bulk of the work in the care of the tuberculous and in the prevention of spread of infection must be done in the home by the private practitioner of medicine. The physician should become more tuberculosis minded, must make more frequent use of the tuberculin skin-test, and must remember that the prevention of the transmission of infection from the active case to his contacts, is of far more importance in the eventual eradication of the disease than the mere arrest of the active process in the patient himself.

The greatest handicap to the successful operation of a program for tuberculosis control is poor environment. Tuberculosis is to a large extent a disease of the poor, of the low-wage earners who can not provide comfortable uncrowded living quarters and adequate food for his family. Many articles have been written concerning tuberculosis among primitive races, and the serious epidemics which have followed the coming of the white people among them. Invariably such epidemics were ascribed to the lack of resistance to infection of the natives but not sufficient attention was paid to the primitive methods of living, absolute lack of sanitary facilities, and overcrowding in makeshift huts—conditions which always produce repeated re-infections. In this country the death rate of Negroes during the period of slavery was practically equal to that of the whites. As slaves the Negroes were fairly well housed and well fed; usually they had medical attention when necessary. After they were given their freedom they lived in more crowded quarters and had poorer food and clothing—and by 1885 the Negro death rate from tuberculosis had risen to 600 per 100,000. In England the mortality from tuberculosis began to show a definite drop in 1838, nearly 50 years before the discovery of the tubercle bacillus. The very probable cause of this drop in mortality was improvement in social and economic conditions. I recently compared three spot maps of the city in which I live. One map, made in the interests of slum-clearance, indicated the location of the filthy tumble-down shacks in which too many of the poor are forced to live. The second map was made to show the areas of the city in which crime and juvenile delinquency are most prevalent. The third map, indicated the residence of those who had died from tuberculosis and those who are now suffering from the disease. These three maps showed that the slum areas, the areas of most crime and juvenile delinquency and those with most active tuberculosis were practically identical. Somewhat less than two years ago, under the auspices of the City Health Department, we skin-tested 2500 children in the grammar grades of the Negro schools of the city, and found 29.4% positive reactors; but in that section of the city where housing and general environmental conditions were worst, positives were 34.55%, while in the two sections where the more prosperous Negroes live the percentages were 18.6 and 19.4 respectively.

The majority of Negroes belong to the low wage-earning class, and are unable to pay a rental that will support better housing; furthermore, better living conditions result from desire for the better things of life, and the majority of the Negroes, uneducated, have little ambition to better their station in life. The continuation of widespread unemployment makes the prospect rather discouraging. Increase in the number of sanatorium beds, and greater efforts to locate infectious cases of tuberculosis and segregate them in these beds has this against it: You can not put 10 or 20 patients in each bed. Also, every sanatorium physician is familiar with the fact that large numbers of infectious cases leave sanatoria against medical advice, and return to their homes to further spread the infection; and most such cases are among those whose living conditions favor propagation of the disease. There is no means of compelling an individual to remain in an institution. It is hoped that continued efforts in the education of the masses, white and Negro, in the basic rules of health will impress upon them that one's family and neighbors are entitled to protection against infection. It is primarily by this means that poor environmental conditions may be improved, and until such improvement is made the eradication of tuberculosis will be impossible.

Many attempts have been made to prevent tuberculosis by immunization, but no results of any practical value have been obtained. It appears that first infection by the tubercle bacillus not only does not confer immunity, but renders the infected individual more liable to reinfections, and to the dangers of more extensive disease. Fortunately primary tuberculosis is a benign disease. It

begins on tissues that are not sensitized to tuberculoprotein, and the bacilli are fairly well controlled before allergy appears. The first reaction of the tissues to the ingestion of tubercle bacilli is a non-specific defensive response on which the foundation of specific immunity is built. This defensive response is present in varying degrees in every individual or race.

It is possible that certain families have inherited a sufficiently powerful non-specific resistance to completely defeat invasions by the tubercle bacillus. We frequently find families among whose antecedents tuberculosis has never appeared, so far as we are able to conclude from a presumably authentic history. Some such families are Negro, and the Negro's chances for massive infection has been continuously much greater than those of the white. Tuberculosis was unknown among Negroes in the savage state. The "galloping consumption," however, is becoming somewhat rare among them, the disease gradually assuming the chronic form usually seen among the whites. Statistics indicate that the death-rate from tuberculosis among Negroes above the age of sixty years is lower than that among whites of similar ages. Possibly the reason for this is that the more susceptible individuals died before reaching this age. The elimination of the unfit by evolutionary processes has no doubt reduced the death rate from tuberculosis and the virulence of the infection; but such processes are too slow to be relied on to solve the problem. We know that prevention of infection will prevent disease, and by this means many individuals among the susceptible can be preserved as community assets.

In prevention of infection the sanatorium plays an extremely important part, but the place of the sanatorium in the scheme has been misunderstood. It is the general conception that the purpose of sanatorium treatment is primarily the arrest if possible of the active case and the return of the patient to a gainful occupation. Most of the active cases of the disease when first seen even by the physician are moderately or far advanced, and a patient who has had an extensive tuberculosis is handicapped after arrest of his disease. Frequently he is either prevented from resuming his previous occupation, or is unable to work full-time. It is necessary for him to observe care in order not to cause a re-activation of his disease, which may occur years after he is first classed as an arrested case. There are 92,786 beds for the treatment of tuberculosis in the United States. From these beds are discharged annually 125,000 cases, not all of them arrested. In the United States there are more than 45,000,000 gainfully occupied individuals, men and women. It is not even reasonable to assume that the yearly addition of such a small number as 125,000 *full-time* workers to this large number would have any appreciable effect on the industrial production of the country.

An article[1] in a recent issue of the *American Review of Tuberculosis* carries reports collected from New York City, Chicago, Philadelphia, Detroit and London, from the states of New York, New Jersey and Massachusetts, and from England and Wales, covering the twenty years from 1915 to 1935, includes the registration of tuberculosis cases and the mortality records for this period. These statistics indicate that, although the number of reported cases of tuberculosis and the number of deaths from the disease were very much reduced during this period of twenty years, there was slight, if any, reduction in the case fatality ratio, in spite of the fact that the much-publicized surgical treatment of the disease had come into widespread use. The author concludes that "the sanatorium or surgical treatment of tuberculosis seems so far to have had little effect on the case fatality rates of the tuberculous population in these communities.... Segregation of active cases and the improvement of living and working conditions, has undoubtedly been a powerful factor limiting infection and preventing the spread of tuberculosis." Also, "it may be concluded that the preventive aspects of isolation in tuberculosis hospitals have been far more effective than those arising from sanatorium or medical treatment."

To my mind, the sanatorium has done its greatest good by the removal of even a limited number of infectious cases from their contacts, thereby reducing the number of future active cases by limiting the chances for infection. No patient should be discharged from a sanatorium unless it is reasonably certain that he or she is non-infectious. To quote Dr. J. A. Myers[2], "The criteria for discharge from sanatoria must include animal inoculations and culture methods, not only of sputum but also of gastric contents."

The after-care of the patient who has obtained an arrest of his disease is one of the most important parts of a tuberculosis control program, and the success of this phase of the program is also dependent on the physician in private practice. The rehabilitation of the ex-patient is oftentimes a troublesome and time-consuming task. Many times it is inadvisable for him to return to his previous line of work, and hence he must be trained for something more suitable to his physical condition. In these days light jobs and part-time jobs are practically non-existent even for the healthy worker. Many arrested tuberculous patients become

reactivated because they are unable to provide sufficient food to maintain their physical resistance. When cared for at all by the welfare agencies they usually receive only sufficient food for a bare subsistence, which is far below the amount necessary to maintain a tuberculous individual.

Welfare authorities seem unwilling to be convinced that it costs much less to supply a tuberculous patient with sufficient food to keep him in good physical condition, than it does to provide him with medical care for months, or years, after he again breaks down. No rehabilitation program can be standardized and applied to tuberculous patients *en masse*. Each case must be fitted individually. Ex-patients vary widely in their mental equipment and previous educational advantages, and in their physical and mental ability to follow a gainful occupation. All these characteristics should be noted before they have achieved an arrest, and their future activities should be planned accordingly. Patients with arrested disease will be handicapped in varying degrees for the balance of their lives; but even part-time jobs will enable them to earn at least a part of their keep, in addition to giving them the knowledge that they are not entirely dependent.

A vital part of the after-care of the tuberculous is the necessity for frequent careful physical examinations so that any re-activation of the disease may be recognized in its incipiency. According to Emerson[3], records indicate that nearly 50% of tuberculous patients discharged in 1933 have already had a fatal recurrence of their disease, and that this occurs in the majority of cases within the first two years. Only about 25% were found to be working and self-supporting. Evidently the expense for the care of these cases before their discharge was largely wasted, and the economic value of the few who are called self-supporting is doubtful. These facts show clearly that the preliminary treatment of the tuberculous is not the most important part of the task.

It is quite possible to work out a more effectual program for lessening the incidence of tuberculosis, and, so greatly reducing the economic loss caused by the disease. The backbone of this plan must be the general practioners of medicine, family doctors, with whatever assistance they require from the specialists in this disease. It is not to be expected that there will be at any time in the near future sufficient institutional beds to care for more than a small percentage of the active cases. There is no valid reason why general hospitals should not accept tuberculosis cases in need of hospitalization for a time; because protection against infection with tuberculosis is a reasonably simple procedure. Most cases *must* be taken care of continuously in the home, and this can be done reasonably effectually. With all the increase of use of surgical procedures in the treatment of tuberculosis, bed-rest remains in all cases the bed-rock of treatment. One's first thought should be to prevent infecting contacts. It is realized that tuberculous patients must be carefully instructed and frequently reminded of the rules.

Tuberculosis is a public health problem, so the physician must have every assistance possible from the public health agencies. The public health nursing service must be made adequate. Since a high percentage of those infected are unable to pay for his services, funds should be provided to remunerate the physician for his work. The custodians of public funds must realize that their community is entitled to as complete health protection as can be provided, and that public health doctors and state and county can furnish necessary medical service in only a small fraction of its cases of tuberculosis.

It can reasonably be expected that tuberculosis may within the next few years, be reduced to a minor role as a killer and crippler, and as a tax-devourer. This objective can be achieved; but only by facing these facts: (1) that primary infections with tuberculosis are relatively benign and require no hospital care, indeed, that most of them do not require departure from the usual routine of life; (2) that at the family doctors' hands and in their own homes should the vast majority of the tuberculous be treated; (3) that public health authorities should utilize their facilities for getting the public ear to (a)iterate and reiterate these facts, and so reëstablish the family doctors in the confidence of the people as to their ability to recognize and manage tuberculosis, and (b) to induce the public to pay the family doctors for this care; and (4) that the public health authorities work out a simple program, with the simple tuberculin test as its foundation, and maintain a continual campaign for routine and repeated tuberculin testing, supplemented by expensive examinations in the exceptional cases only; and providing hospitalization in exceptional cases only.

Summary

1. The two factors that hinder reduction in the incidence of tuberculosis are, (1) failure to recognize the disease in the early stage, and (2) continuous of poor environmental conditions.

2. That first infections in children should be treated in an institution is a rather widespread fallacy. These infections heal without treatment as a rule and are benign conditions. Such children should not be kept out of school, and it is not

necessary to limit them in their usual activities.

3. It has become a fad to teach that all active tuberculous cases must be treated in a sanatorium. There are 92,286 beds for the treatment of tuberculous patients in the United States with 700,000 cases to occupy these beds. Hence, most of the cases must be taken care of in the home; and this can be done reasonably well.

4. The case fatality rate at this time is practically the same as it was in 1915. This rate apparently has not been reduced by the wide use of surgical treatment of the disease.

5. It is evident that the majority of the cases of active tuberculosis must be cared for in the home by the general practitioner of medicine. He, as a rule, is the one who sees them first, and is the one who can and must look after them. There is no question that the family doctor is the backbone of the campaign for the eventual eradication of tuberculosis.

References

1. Dublin, L. I.: Case fatality rates in tuberculosis. *Am. Rev. Tuberc.* Feb., 1938, 27, 125

2. Myers, J. A.: A look backward and forward (Presidential address). Trans. of 34th Annual Meeting, National Tuberc. Assoc., June 1938.

3. Emerson, Kendall: The Problem of after-care, *Bul. of N.T.A.*, Jan. 1939.

Discussion

Dr. Robert Wilson, Charleston:

The importance of the economic situation in determining the prevalence of tuberculosis was well illustrated in England and in Germany during and after the World War.... There was an increase in tuberculosis in England during the war. After the war the decrease began and has continued to the present time. The curve in Germany was similar. Tuberculosis increased during the war, then decreased when the economic situation improved, bringing more ample food clothing and housing, more freedom from worry. I was very much interested in what was said about tuberculosis among Negroes. We find exactly the same condition here—prevalence of tuberculosis due to ignorance and poor economic condition. Tuberculosis increased here among the Negroes 10 years before the Civil War—(not during the war as is commonly supposed) and has been on the increase ever since. At the same time there was an increase in the Negro population in the city of Charleston. Many were crowded into very small homes, and I believe this is responsible largely for the increase of tuberculosis among our Negroes at that time.

Dr. Donnelly closing:

I would like again to emphasize the fact that the Negro problem in the South is the particular problem we have to face, and emphasis should be put on that phase, as the Negroes are a constant menace to the white race; also the necessity for energetic and hopeful treatment in the homes of that great majority that can not be gotten into sanatoria.

DISCUSSION OF DR. PENDLETON'S PAPER

(Paper Published in April Issue)

Dr. G. R. Wilkinson, Greenville:

This paper calls to our attention one of the troubles that has probably beset mankind from the earliest times. The trouble with recognizing the disease is that it does not stay the same long. If one could see these people when the disease is at its peak, very few would fail to make the right diagnosis; but we see these people often when they are at their best and their story sounds rather weird.

It would be fine if we had some laboratory maneuver that could be instituted so that we could tell specifically whether a person is allergic or not. In view of the fact that no such single procedure has yet been instituted, we will have to depend on the history. The taking of an allergic history need not be as involved as some would have it. The discussor is of the opinion that if we would keep allergy in mind and ask a few pertinent questions with regard to its possible presence in the routine examining of patients, we would find this section of the history rather illuminating.

Dr. J. T. Wolfe, Washington:

It gives me great pleasure to hear Dr. Pendleton stress the importance of careful history and physical examination in the asthmatic patient because for years I have claimed that the effort to treat asthma by desensitization methods based upon information derived from skin tests is like trying to play a symphony on a one-stringed fiddle.

Many authorities claim positive skin tests indicate only that the skin is sensitive, also investigators have proven that positive skin reactions are obtained in the non-asthmatic and the non-hayfever patient is about the same proportion as in those suffering with these so-called allergic conditions. Dr. Friedenwald read a paper on gastric crises in pulmonary tuberculosis before a meeting of the Southern Medical Association and in discussing his paper I indicated how irritative stimuli picked up by the sensory fibers of the vagus in the inflamed lung tissue are transmitted to the vagal center; and, by the motor nucleus sent down the motor fibers to the stomach, thus interfering with digestion. Dr. Friedenwald agreed with this thought and mentioned some authority who had blamed this condition upon the vagus mechanism.

Sanborn of the Mayo Clinic, about 1921, reported a series of 800 allergic cases in which 500 were absolutely negative to protein sensitization, 100 were doubtful, and only 200 positive as indicated by skin tests.

Vertebral Fractures Produced by Metrazol Induced Convulsions

(Philip Polatin, *et al*, New York, in *J. A.M.A.*, April 29th)

In 51 cases of psychiatric disorders in which metrazol was used to produce convulsions, x-ray examinations of the thoracic part of the spine were subsequently performed. These examinations revealed compression fractures of the vertebrae in 43.1% of the cases. The incidence was higher in female patients than in male. In most instances the fractures were multiple.

It is probable that these fractures are produced by acute anterior flexion of the spine which occurs during the convulsion induced by metrazol. In view of the beneficial effects of metrazol in the therapy of mental diseases, attempts are being made to avoid this complication.

All polycythemic states are probably secondary or overcompensatory mechanisms to some physiological or pathological change, rather than primary conditions.—*Reznikoff.*

The Scotch Universities in the 18th century granted their degrees, especially that of Doctor of Medicine, in so liberal a fashion that it became a public scandal.—*Riesman.*

Recollections of a Country Doctor*

Matt Otey Burke, M.D., Richmond, Virginia

MANY years ago eighty-five recent graduates came to Richmond to obtain permission to practice medicine in the State of Virginia. The examination was held in the Legislative Hall of the Capitol. We struggled for two days and two nights with the questions given by the Examining Board, the next day we awaited anxiously to hear the verdict. Forty-five passed and forty failed. This was my only experience in the legislature.

To "The Blue-Grass"

Armed with a diploma and a certificate from the Medical Examining Board, both stating that I was duly qualified to practice medicine, I expected the people of Russell County to at least recognize the fact that I was a doctor; they accepted the title but for several months they seemed to think it was only a part of my name. I traveled from Bluefield, West Virginia, to Castlewood, Virginia, on the first through train over the Clinch Valley Railroad. The building of a railroad through that secluded part of Virginia was the beginning of a new era for the people, a complete change of their habits and a devastation of their primeval forests. I sometimes wonder if so-called modern progress was a blessing to those people. A contented, independent, prosperous population has become a restless, more or less dependent and, in a measure, a dissatisfied, public. Today the forests are gone; many of the green carpeted hills and valleys are brown corroded spots. A people who made most of the things they needed and used are now dependent upon factories and different modes of rapid transportation. The cobbler's bench and saddler's horse, the hand loom and the quilting frame, the flax and spinning wheels are found only in antique shops. The scythe and sickle are rusting in some forgotten shed. The millstones adorn the entrance of some estate, whose owner probably does not know the difference between old country flour and the white patent flour, which is mostly starch. The streams, once teeming with fish, have no attraction for the angler; the woodlands, once the hunter's paradise, no longer lure the hounds. Even the old copper still, from which trickled brandy and corn in their purity, has given place to bottled in bond or moonshine. The saddle horse, honored by Bob Taylor as "Poetry in satin skins," has been replaced by the gasoline engine. Has modern progress helped or hindered?

If you will consider the picture of Virginia as that of a huge shoe, its back bathed by the waters of the Atlantic ocean, its heel and sole resting on North Carolina and Tennessee, its toe firmly planted in the Cumberland Mountains, laced by Kentucky and West Virginia, you will find the great southwest filling the western fourth of this shoe.

It is of five counties that I wish to speak, Tazewell, Russell, Buchanan, Dickenson and Wise—most particularly of Russell and Buchanan. Tazewell and part of Buchanan border on West Virginia; part of Buchanan, all of Dickenson and Wise, border on Kentucky. Russell is west of Tazewell, south of Buchanan and Dickenson and south and east of Wise. Through this section extend two of the mountain ranges of the Appalachian System.

Somewhere in West Virginia, Big Sandy Ridge starts west. It forms the border between Tazewell and West Virginia, separates Russell from Buchanan and Dickenson and wanders on through Wise; its longest arms reach northward. As its name implies its formation is sandstone, beautiful and useful building stone. When first quarried it can be cut with a hatchet or sawed with a carpenter's saw, after long exposure to the air it is as hard as granite. It is in this region that we find the coal fields. There are three workable, practically horizontal, seams of coal above water level, known as drift mines. There are several seams below water level which may some day be worked; they will be shaft mines.

On the Southern border of Tazewell and Russell is another range, Clinch mountain. Clinch is limestone and the country between the foot hills of Big Sandy and Clinch mountain is underlaid with lime. Between the two main ranges are several broken ranges and innumerable hills. Most of the valleys are narrow and tortuous. This is a natural blue-grass country. The first farmers of this section had trouble with the blue-grass. A field cleared one year would be covered with the blue-grass the next year and they said the blue-grass would ruin the country. They afterwards found it to be their most valuable asset. This section is drained by Clinch River and its tributaries, which wanders through into Tennessee, joins the Holston and

*Presented by title to the Tri-State Medical Association of the Carolinas and Virginia, meeting at Charleston, February 20th-21st.

forms the Tennessee River. Many years ago there were numerous caves in this limestone country; in the course of time the stalactites and stalagmites met and left a wealth of onyx.

Fifty years ago these hills were covered with virgin timber, there were millions of yellow populars measuring fifty to eighty feet to the first limb, three to six feet in diameter. Until the late eighties the nearest railroad stations were Saltville and Abingdon. The inhabitants of this part of Virginia were of English, Irish and Scotch descent, most of them of the purest type of the Anglo-Saxon race.

A Patient Another One

It was in this section and among these people that I spent the most valuable part of my life. The first four months of my professional life were spent in Castlewood. The first month brought no calls; as the third month was waning I became somewhat discouraged and wondered if I had studied the wrong profession. A farm-hand asked me to pull an aching tooth. he sat on a log in the yard while I secured a firm hold with the forceps and pulled with all my strength; he came over the log and was pulled over the grass until the forceps slipped, but the tooth was as securely attached as ever. I extracted the ache but not the tooth. This was my last experience in dentistry. Shortly after this, a young lady had a very bad case of quinsy; I was called and spent most of the time nursing this patient until Nature came to the rescue and ruptured the abscess.

A Serious Shortage

A short while after this the station agent got tangled up over his balance sheet, it was about $1.70 short, and he could not account for it; he worried over it for two days, then decided to shoot it out. The ball passed through his chest and lodged in the wall of the room, missed his heart by a half-inch. I examined his wound, found the breath coming from both entrance and exit wounds; but apparently no internal bleeding. I dressed his wounds. He was up in a week, said he had not promised anybody that he would not try it again. Some of the officials found the mistake in his figures, so he threw the gun away and stuck to his job. The last of September Dr. Dew asked me to take his practice at Honaker as he was leaving for Eastern Virginia.

Moving to Town

I left Castlewood Tuesday morning at a very early hour as I had to make the 28-mile journey on horseback. The valley was shrouded in the dense fog which so commonly forms in the clear cool nights of September. Half way up Sandy Ridge the fog was settling. I paused at the top to view the scenery. Far to the south was Cooper Ridge, clothed in every hue of autumnal tinted foliage; the valley was a vast silvery lake of mist; in a little while the gray veil vanished, revealing rolling pastures, interspersed with clumps of woodland; in devious turns, Clinch River, accompanied first on one side then the other by a serpentine railroad.

I resumed my journey on what would have been a long lonesome road had not Nature supplied a gorgeous picture at every turn of the highway. After traveling several miles I met the mail carrier and asked the distance to Honaker: "Hit's about 15 mile." I thought my interest in the scenery had shortened the journey, until a few hours later I met another man who told me it was "about 15 mile" and later on another, who gave an estimate of "20 mile." I then asked if I was on the right end of the road; "Oh, yes; just follow that road up the creek till you come to Sim Comb's store, then cross the ridge and turn left, follow the mountain road and you'll git to Honaker afore sundown." Later in the afternoon, emerging from a very narrow pass between the hills, I saw a village which I soon learned was Honaker—and the sun was not yet down.

My first impression was that Honaker was reached from the north by a canyon; from the south by a narrow pass between the hills; from the east by a deep cut and from the west by a tunnel. I afterwards found that there were four fairly good roads entering the town. The morning after my arrival Dr. Dew took me to see a patient with typhoid fever. To reach the home of the patient it was necessary to go by a path over two steep hills, through three gates, two sets of drawbars and one fence. One of the hills was so steep that my saddle, not secured by a breast strap, slipped back and back until both saddle and rider went over the horse's tail. I visited this patient every other day until his recovery. His account is still on an old ledger with no credits.

Busy

There were no more idle days. Most of the homes were reached by paths, there were many gates to open, drawbars to lower and fences to let down, often the paths were the beds of creeks. The sound of "Hello, Doctor" for a while was welcome, later a little disturbing, especially when one had not slept two hours out of the 24, except the sleep obtained on horseback. I became an expert saddle sleeper.

A Tragedy at Butcher Knife

A few nights after my arrival at Honaker there was a hurried call to Sword's Creek. Sword's Creek, the next station east of Honaker, notorious for fights and murders, was aptly called Butcher

Knife. The sheriff had been notified that an escaped prisoner would spend the night at a house a mile from the village and a young married man from Honaker had been deputized to assist in the capture. This man was placed in front of the house while the other officers guarded the rear and sides. He was instructed to shoot any one attempting to leave the house. After waiting in the darkness for an hour or longer, the owner of the house, an elderly man, came to the door. Thinking the prisoner was trying to escape, the deputized officer fired. Dr. Dew was called at once. The ball had struck the sixth rib, ranged upward to the axilla and diagonally down to the seventh rib in his back and was easily removed. The ball did not go beneath the ribs, yet the man died from pneumonia in less than a week. There was a great deal of excitement, bitter feeling and fear that a family fued would result.

"You Show Do Know Your Business"

I was awakened one frosty morning by a shrill voice from the lane below my window. I went to the window. The caller said: "We need a doctor on Kent's Ridge right away; a woman is mighty sick; she may be dead by this time." "Come in and get warm while I get ready." "I ain't got time to come in." "You must be cold and you could tell me about the patient while I dress; it will take less time if you come in." With that I closed the window and proceeded to get ready. He came in, and I saw disappointment written all over his face. He had come for a doctor and thought he had found a mere boy. He told me the nature of the case and I knew that there was no immediate hurry. It was a two-hour ride and most of the time was spent in answering his questions.

When we reached the house it required probably 15 minutes to relieve the patient. I then joined the men in the yard. After a little while my caller asked how the patient was. "Do you think you can save her doctor?" "I hope she will get well." "Ain't you going to do anything for her?" "I have done all I can at present." The men were uneasy. I was enjoying the situation when the husband came out and told the men that the patient was all right. My caller walked around me once or twice, then stopped and said: "You show do know your business."

The chief character in my first obstetrical case was already the mother of six children. My practical experience was very limited. As I left my office I slipped a small volume, King's *Manual of Obstetrics,* in my pocket. After examining the patient, I thought it would be several hours before my services would be needed, but I dared not leave, so retired to another room and spent most of the day reviewing my book. In taking the patient's history I learned that the two previous confinements had been followed by sepsis. I took every precaution to prevent it this time. Everything progressed normally and the mother had no after trouble, which established my reputation as an obstetrician. I soon learned that meddlesome interference should be avoided, that a few simple procedures were very beneficial, that calm reassurance helped considerably.

I was fortunate enough never to have a case of sepsis following my own deliveries. I officiated at the advent of 12 sets of twins and one set of triplets during my obstetrical experience in the mountains.

Spotted Fever

In the spring of 1892 we had an epidemic of cerebrospinal meningitis, most of the patients 14 to 22 years of age. I felt entirely helpless in this crisis and wrote to my father, Doctor James P. Burke, Meridianville, Alabama, and to Doctor Hunter McGuire, Richmond, Virginia, for advice. Their replies were similar—that there was no specific for the disease; to keep them as comfortable as possible with opiates and to expect most of them to die. There were more than 40 cases with a death rate of 50 per cent.

Likerin' Up the Bears

One of the old settlers had a large sugar-maple orchard. In the late winter or early spring sap flows freely and is generally collected in wooden troughs. This man found his troughs empty on several mornings.

"I was out to get my sap one morning and there was no sap; the weather was suitable but the troughs were empty, I went out again next morning but no sap. I couldn't think who was stealing my sap. In a day or two there fell a light snow, just a good tracking snow, so I goes out thinking maybe I can track the thief, and what you reckon I found? I found bear tracks all over the grove and every trough was empty. Well I says; I'll fix you tonight Mr. Bear; so just about sunset I goes down to my still and I takes two jugs of licker and fills a few troughs with fresh corn licker. Next morning about sunup I goes out to see if Mr. Bear could get away with all that liquor. Well sir, there were eight bears settin up against the trees, too drunk to walk. I gets my ax and knocks every one of em in the head, skins and salts em down for next year's meat."

Use for a Forked Apple Limb

The section hands never bought coal, they appropriated a daily supply from the coal cars. The grade on Finney Hill was too steep for the engines to pull a full train, so half of the train was brought

up and left on the siding, while the engines went back for the other cars. The son of one of the section men was getting his night's supply of coal and failed to get off before the train begun to move, he fell with one leg under the wheels, the foot and ankle were crushed beyond repair. I never liked surgery and had no instruments except a pocket case. I purchased a key hole saw at the store and borrowed a butcher knife, boiled my saw, butcher knife, scalpel, artery forceps, scissors, needles and thread and proceeded to arrange for the operation. There was no doctor near enough to get in less than six to ten hours and this was an emergency. The only voluntary help I could obtain was the local blacksmith. I gave the anesthetic, then, by the assistance of the blacksmith, amputated the leg, however, I did not need the butcher knife. The boy made a speedy recovery and by the aid of a forked apple limb, shaped and padded, was soon out at play. Twenty years later the boy obtained the position of station agent.

Fall Fever

My practice in the early summer of 1892 gave me a post graduate course in typhoid fever: my regular course was a personal experience of eight weeks before studying medicine. All of the people built the house near a spring, generally a little above it, consequently the drainage from the buildings frequently polluted the spring. All the springs became muddy or milky after a rain. In most of the hollows there were two to six houses, every hollow had its creek fed by many springs. If there was a case of typhoid in the upper house, later there were cases in the lower houses. I instructed the people to burn all excreta from the patient and to boil all dishes and linen and their drinking water, and, when possible, to use from a spring above the buildings. The routine liquid and starvation treatment caused extreme weakness, emaciation and prolonged convalescence. We often encountered two to four cases in one family hence it was easy to study the effect of diet and of medicine. Drugs had very little beneficial effect. Digestants were always needed. Foods that could be digested were allowed and water administered freely. After four years the number of cases decidedly decreased. Since one attack rendered most people immune to a second attack I hoped that some day we might find something that would prevent the first attack. That hope has been realized.

A Down Hill Race With A Log

A rawboned mountain giant was getting out saw logs on a long steep ridge. The side of the ridge had been cleared and was now a blue-grass pasture. It was an easy matter to start the logs rolling and they found their way to the bottom of the ridge very quickly. It was nearly sundown and one more log was to be rolled out. This last log rolled only a few feet when it encountered a sapling which stopped its progress; it almost changed ends but did not have quite enough speed to complete the circle. There were three ways to overcome the obstruction, first to cut the sapling on lower side of the log, this was too dangerous; second, roll the upper end up hill a few feet, this was rather strenuous for one man; the third, was to roll the lower end down hill; this was the easiest way but required a quick eye and a fleet foot to escape the log when it turned and started on its journey. He pried and strained with his crowbar and started his race for a safer place. He had almost reached his goal when he hung his toe under a root and fell full length down hill, just as he raised himself on hands and knees, the sharp edge of the log struck him in the middle of his posterum and split him wide open for several inches. The cut extended through skin and flesh, into the rectum and part of the sacrum.

The messenger had to ride 10 miles to reach me and I ten miles back to the patient. After cleansing the wound, repairing the walls of the rectum, adjusting the bones, sewing the muscles and skin, putting on a comfortable binder around the hips and prescribing powders to allay the pain, I left him to the tender mercies of Nature and the anxious care of his family. On my return I was surprised to find him cheerful and comparatively easy. The soft tissues healed and the bones united without leaving a deformity or any incapacity, and in six weeks he was able to superintend the loading of his logs. The defeated runner was victorious in the end—both ends.

Sports

Beef and turkey shoots among the sports greatly enjoyed by the men in the mountains. The first was target shooting and the prizes were various cuts of beef. The dummy prize was the tail. The second, was a live turkey placed in a shallow box covered with slats; between the slats the turkey naturally and necessarily raised his head. The head was the target; the prize was the turkey. To hit the box was a forfeit. White corn was imbibed freely at these gatherings and this practice frequently resulted in disputes that were often fatal as shown in the following chapter.

To a Shootin' on a Pump Car

The last of September found me thoroughly fagged, so I decided to spend the week-end with my friends at Castlewood. About midnight my host aroused me from sleep, telling me that one of my friends had been wounded and four men had

come for me on a pump car. Our pathway to the railroad was through an orchard and we filled our pockets with fallen apples. Not knowing the schedule of the night freight trains we flagged each trestle and tunnel. After traveling several miles, it was suggested that we slow up and try the apples. The first bite was followed by a sputtering, and volley of oaths by one of the crew, "That da- dadamned apple's a walnut."

Twenty miles on a pump car, over trestles and through tunnels, in the night is no fun.

We at last pumped our car to Johnson's siding and proceeded on horseback to where I found my patient with a bullet in each thigh and in each leg below the knee, an ugly wound over the sixth rib below the heart, completely paralyzed below the sixth thoracic vertebra, weak, helpless but without pain.

The bullets in his legs were removed without an anesthetic as the injury to the cord had obliterated all sensation in his legs. I knew that the other bullet was buried in the spine. The patient was carried on a litter to the train, by train to his home. A surgeon was called and examined the patient but declined to operate The patient lived 93 days.

Post mortem examination revealed the path of the bullet under the fifth rib, the bullet lodged in the body of the fifth thoracic vertebra slightly impinging in the canal. The cord was only a sac of pus.

This death occurred during the severe winter of 1892-93. In order to dig a grave it was necessary to keep a log pile burning for two days, so deep was the freeze.

Up and Down the Frozen Creeks for Three Months

The morning of the 27th of November, 1892, was overcast with thick gray clouds; the ground had been frozen for several days. About noon snow began to fall and continued, thick and fast, until 10 that night, when we had a white carpet 18 inches thick. Returning home at a late hour of the night, I could locate the road only by the fences and bushes. My horse stepped on a slanting boulder, which was concealed by the snow, and fell, my foot hung in the stirrup. The horse became frightened and dragged me some distance before I could stop him. Had I not held on to the bridle rein I would never have reached home. This snow, supplemented by several others, completely covered the ground for three months. Many frozen feet, hands and ears were encountered. One man lost half of each foot. For a time it seemed that both feet would have to be amputated; but, by skin grafting, I managed to save a part of each foot, for which he was ever grateful.

Christmas is supposed to be spent with family and friends. It should be observed in reverence and thanksgiving. Mine were spent in trying to relieve suffering humanity and repairing wounds caused by too much Christmas cheer.

The night of Christmas Eve, 1892, was bitterly cold, way below zero. Everything was covered with a thick blanket of snow. I was hoping for one night's rest when the familiar "Hello, Doctor" aroused me. My caller said that two men near Cook's Mill were badly wounded and needed attention at once. My horse had lost a shoe too late to be replaced that night, my caller insisted that I ride his horse in order to save time, he riding behind me. Our nearest route was down the middle of a frozen creek for six miles, then over a mountain. The ice on the creek did not break. My companion proposed that we take a drink. I politely declined, "You don't mind if I take one do you?" "Not if you don't take too much, but if you fall off I shall have to leave you where you fall." He had a quart bottle in each overcoat pocket.

We reached the first patient about 9 o'clock. As we neared the house, it sounded like a camp meeting. Some one was playing an organ and the crowd was singing hymns. The patient had a cut in his arm. When the many wrappings were removed the blood begun to spurt. In the wound was soot, cobwebs and felt to stop the bleeding. It required more time to cleanse the wound than to tie the artery and sew the cut. The other patient was about two miles down another frozen creek. We found him in a cabin, lying on a sheep skin, in front of the fire. His wind pipe was cut in two. He thought he was going to die because he could not talk. There was no lamp, lantern or candle in the cabin. I had to repair his windpipe by the light of a torch.

I was out every day and part of each night of this memorable winter of snow and ice. It was a daily occurrence to have to cut my shoes from the stirrups after a long ride.

Just D'ont Help That B'ar

Prize-fights draw immense crowds that pay fabulous prices for witnessing the animal instinct of one man contending with the brute force of another man. This fight had no gallery.

Mr. Maynard believed that hard work and determination were the chief assets of man. He was six feet tall, as straight as an indian, all bone and muscle. His treatment for a cold was to jump in the creek with all of his clothes on, then work hard until his clothes were dry. I don't think he consulted a doctor for 40 years.

He told me of a bear fight that he had when a young man. "When I was a boy I had heard of

men who could whip a bear without weapons and I wanted to try it. When I was 18 I said now is the time to prove my manhood. There was a cave on the side of the mountain not far from home and a bear lived in that cave. I went out to the cave early one morning and waited some time but the bear did not come out. So I went a little way in and threw rocks until Mr. Bear came out growling; as he reached the opening of the cave I jumped on his back and fastened my arms around his neck. He soon threw me off, I then tried to knock him out with my fist. We fought, clinched and broke for a long time, my clothes were in strings and my body all scratched up. I thought my time had come but finally I got a strangle hold on his neck and choked him to death. That fight cured me."

Major Surgery; Minor Pay

Helping this child has been one of my happiest recollections.

Jim Ward possessed the poor man's bounty—a house full of children but none to spare. Several of the children were playing in the lot where the cow was grazing, in some way the cow's horn got into the boy's mouth, which frightened the cow as well as the boy. The entire upper alveolar process, from first molar on each side, with all the teeth intact, was torn loose; only the soft tissues in front were holding. It looked like a plate of false teeth hanging out of his mouth. One lower tooth was missing. I happened to be in the neighborhood at the time of the accident. I washed and replaced the broken fragments, approximated the edges and membranes on the inside of his mouth, closed the lower jaw so that the bones could not slip; applied a cast of cardboard reinforced by flour and water, leaving a small opening so that he could be fed by a tube inserted through the gap of the missing tooth, also openings for nose and eyes; and fastened the cast with a firm bandage around his head and chin, reinforced by the paste.

Some time later Jim came to see me; "Well Doc, my boy is well, how much do I owe you for that job?" "I am glad to have had the experience and have made no charge." "But I want to pay you. I don't like to be beholden to nobody." "If it will relieve your mind, you can pay me for a visit, to your house." "How much is that?" "Two dollars." "Hu;—I ain't got no two dollars, I lowed you'd charge me 50 cents."

Nineteenth Child

In a narrow blue-grass valley lived a farmer and his wife who took unto themselves the command given to Noah and his sons: "Be fruitful and multiply, and replenish the earth." I was called to officiate at the advent of the eighteenth child, which happened to be not only the eighteenth but one extra, for good measure. Unfortunately there was no unsettled country for this family to populate.

If Mr. Roosevelt would add another letter to his alphabet and make an appropriation for large families many of the people of Russell County could retire from work.

If every graduate in medicine could serve a year in a hospital, then spend two years in real country practice or in the slums of the cities, on government pay, we would have better doctors and there would be no excuse for socialized medicine.

Conclusion

I began my professional life with a university degree, a medical diploma, a certificate from the Virginia Medical Examining Board, state license to practice medicine, no money but bright hopes, which soon began to fade. I passed through the desert of professional despair, witnessed a mirage, then reached an oasis, passed on to green pastures and fountains of sparkling waters. I worked hard, mingled with the humblest and highest, met emergencies as they arose, trusting in Nature and a Higher Power for results. I eased the pains of humanity as best I could, officiated at the advent of many new lives and listened to the last feeble heart beats of many departing souls. Always I tried to correct the errors that caused disease, to shorten the duration of illness by sustaining physical resistance thus decreasing the stage of convalescence. I settled many disputes, restored lost friendships, used as examples the errors of some unfortunates to correct the lives of their friends, tided some through the sloughs of financial crises and tried to guide some benighted ones to a pathway of light for their declining years.

I lisened to the philosophy of many a mountain sage and gained inspiration from men and women who lived close to Nature and closer to God.

204 East Franklin Street.

New Diagnosis for Ringworm

(The Diplomate, April)

A new hanging-drop method developed at the University of Michigan by Drs. Franz L. Blumenthal and James S. Snow, of the medical school has been shown to be the most useful laboratory aid in the diagnosis of tinea, or fungus infections of the skin; it is dependable, simple, inexpensive and rapid. A small quantity of a culture medium which contains a sample of the infected tissue is suspended from a glass slide, incubated at room temperature and examined twice a day for the growth of fungus.

In 48 cases studied the hanging-drop method showed a positive growth in 72% in an average time of less than two days.

Martensson, of Stockholm, (*Arch. of Surg.*, April, 1937) estimated that 10.5% of the population had gallstones.

The Relation of Chemical Fertilizers to Health*

H. W. KNIGHT M.D., Bostic, North Carolina

Captain Indian Medical Service, Retired

DURING the past thirty years there has been a constant increase of gastrointestinal complaints and those disease conditions allied wih digestive derangements; *e.g.*—hyperacidity, fermentation of ingested food with attendant distress, constipation, kidney involvements, pellagra and various allergic skin diseases. The cause has been the subject of investigation. Many possible causes failed to produce evidence which determined the causative agent.

Regulation of diet, precaution in the preparation of food and care in mastication with regularity of meal hours, failed to restore normal digestion. Persons consuming the same staple articles of diet that sustained their forebears in strength and vigor became ill of digestive disorders. This observation prompted an investigation of the methods of growing and preparing the food taken by these persons.

Corn bread, peas, pork and molasses were for many decades the main articles of diet among the poor of this section. Grinding the corn by the modern rapid process was questioned and it was found that no appreciable improvement in the digestive process followed the use of corn meal ground in the stone mill. Going back to baking corn bread by the slow process in the fireplace oven failed to correct the digestive difficulties.

It was learned that acute digestive distress followed consumption of watermelon grown on soil treated with soda. The same patient could consume watermelons grown on soil fertilized with manure without digestive disturbance. It was found that many persons had experienced this difference in effects with watermelons grown on soda-treated land and on land treated with manure. Several also had noted ill effects from the eating of other vegetable substances grown on land treated with soda.

Inquiry into the cultivation of garden produce for families among whom gastrointestinal disturbances were common elicited the fact that the garden was treated with chemical fertilizers before planting or during the growth of the vegetables. It was found that some familes ceasing the use of chemical fertilizers for their garden soil regained their normal digestive power. The wife and brother of a farmer residing in Rutherford County were constantly under treatment for digestive disturbance. For two years he has fertilized his garden with manure only: for two years all the members of the family have been free from all digestive disturbances. Sufficient other cases have reported similar results to justify advising that chemical fertilizer be not used on the garden.

The very rapid, forced growth apparently renders the vegetation unfit for human consumption. It is observed that the abnormal growth produces an alteration in the appearance, odor and taste of the garden produce, whether raw or cooked. This has been observed especially in the growth and consumption of beans and peas.

It is my opinion that the structure of the cells becomes abnormal and the essential vitamins are lost, while substances are generated which become toxic and irritant to the gastrointestinal tract. It is doubtful if these effects are produced by the transfer of the chemicals from the soil to the stomach, but rather that a rapid forcing of growth of the plant is caused by the chemicals changing the plant cells and generating a toxic substance within the cells. The fact that such vegetation deteriorates more rapidly than that grown on manure-treated soil is offered in substantiation. It seems to lack the normal healthy chemical balance within the cells of the plant.

It is generally thought that chemicals so act on the soil that closely bound elements are liberated to supply the plant with essential food. Soil variations, even in a small area, are so pronounced that the plant cannot be supplied with just the proper plant ration. It is known that land treated with chemicals in a few seasons fails to respond to their use in promoting plant growth.

When chemicals are used on the soil the bacterial content of the land is depleted, and it can best be restored to productivity by growing plant life on whose roots bacteria live and multiply. Clover and alfalfa are cited as examples.

Stable manure contains nitrifying bacteria which so act on the elements of the soil as to liberate necessary food to the plant. Manure and rotation of crops maintain the productivity of the soil in a natural manner. The bacterial content of the soil can not survive in the presence of the chemicals of commercial fertilizers.

By interstate commerce there is distribution of vegetables and fruit from state to state. At cer-

*Presented to the Rutherford County Medical Society, meeting at Rutherfordton, [illegible]

tain seasons tomatoes are shipped from Florida to North Carolina. These are grown on either sandy or black soil and the rapidity of growth is increased by the use of soda. The tomatoes are picked and packed while green, shipped in refrigerator cars and kept under refrigeration until displayed for sale. Then they ripen abnormally, being often mottled red and green. The inner structure never assumes the natural deep red color of the fruit grown without chemicals. The home-grown tomatoes are very much the same as those from Florida, except for the effect of refrigeration. There is a difference in odor, structural appearance and taste from tomatoes grown on manure-treated soil.

Beans and peas are apparently improved by the use of chemicals on the soil. However, digestive disturbances follow a hearty meal of those grown on soil chemically treated, while soil treated with manure produces beans and peas causing no digestive trouble when consumed. Even nursing babies have digestive disturbances when the mother eats heartily of chemically grown beans and peas.

Cabbages, cucumbers, melons, beans, peas and sweet corn seem to produce acute toxic symptoms when grown on chemically treated soil. Carrots so grown have an altered flavor, still it is difficult to trace digestive troubles to them since the quantity consumed is insufficient to produce any results. Potatoes grow more rapidly, consistency and flavor are altered for the worse, while their consumption tends to produce gastrointestinal disturbance. Corn cooked on the ear is quite indigestible when chemically grown. Corn grown for corn meal is greatly affected by soda. When the meal is baked into bread or cooked into mush the flavor is different than that of corn grown on manured land.

These observations are presented since there seems to be a direct relation between the use as food of vegetables grown by the aid of chemical fertilizers, and gastrointestinal and related involvements. It is suggested to me that the increase in the number of patients afflicted with allergic skin diseases may be due to this same fertilization of vegetables by chemical fertilizers.

There is an opportunity for research into various phases of the relation of commercial fertilizer to health. We may feel quite justified in directing public attention to the desirability and safety in dependence on manure and crop rotation to supply the soil with bacteria in the growth of garden produce.

In questioning a patient suffering from digestive derangement, nutritional diseases, functional kidney involvement or allergic skin affections it would be helpful to inquire concerning the mode of soil preparation for garden produce, since there is a decided difference in these complaints in this country and in countries where no chemical treatment of soil is practiced. Studies concerning the relation of chemically treated soil and health are best pursued in rural areas, since town folks are dependent on commercial supply of vegetables for food supply.

Gastrointestinal irregularities assumes a complex character and present quite a different picture than some 30 years ago when chemical treatment of the soil was infrequent.

It is interesting to recall that pellagra and American digestive irregularities were not seen in Africa or in India where chemical fertilization of the soil was not practiced.

The Treatment of Scabies

(C. B. Erickson, Shreveport, in *Jl. Ark. Med. Soc.*, May)

Social status does not enter into the diagnosis of scabies. In patients addicted to the use of water and soap, particularly to a soap of a germicidal or antipruritic nature, the eruption is often minimized to the extent that one must diagnose the disease on suspicion. The salient diagnostic points are itching, worse after retiring, and the presence of other cases of itching in the home.

Change bed linens at the beginning of treatment. Fold top sheet over blankets and pin down with safety pins. After hot bath using a strong soap with vigorous scrubbing, thoroughly dry the body, then apply medication beginning at the neck and covering the entire body. Do not skip as much as the size of a pinhead. An ointment is to be spread in a thin coat without rubbing. Standing in a room of a comfortable temperature for 15 minutes, skin should be barely greasy. In a freshly laundered sleeping garment, the patient retires to rest. The following morning without bathing he is to dress in fresh clothing and, if woolen or silk is to be worn, it must have been freshly dry cleaned and steamed.

The above procedure should be repeated each night as many times as the drug used necessitates. During the day following the last application a final general clean-up must be made, which means fresh bed linens, sleeping garment and day habiliments. A freshly dry-cleaned suit or dress should be ready for this time.

In most hands the U.S.P. sulphur ointment is eminently satisfactory, used for 5 or 6 nights. Ointment of pyrethrum used 5 or 6 nights is not unpleasant and quite efficient.

It is essential that all infested members of the family be treated simultaneously. Insist that no more than the recommended number of applications be given, even though patient may continue to itch slightly. Discontinuance of the anti-scabetic and use of a simple anti-puritic, such as calamine lotion, is all that is necessary to complete the cure.

I am told farmers are more susceptible to heat prostrations or sunstroke than they once were and that the reason is they eat less salty meat. Deficiency of salt in the blood is the direct cause of heat prostration. To keep the body in good order when work causes much perspiration, extra salt must be taken. Salt tablets are now put up in special sweat-proof packages to be carried in the pocket.—*S. H. McCrory, U. S. Dept. of Agriculture.*

Chorioepithelioma of the Uterus*

Robert Thrift Ferguson, M.A., M.D., F.A.C.S., Charlotte, North Carolina

THE subject on which I have chosen to speak to you is one of great interest and importance, although the disease is so rare that no one man has had the care of a large series of cases. In a period of 30 years in pelvic surgery only one case has come under my care. While the disease is rare it is more to be dreaded than any postpartum complication that I know of from the standpoint of prognosis.

The disease has been written about as malignant syncytioma, chorioadenoma, choriocarcinoma and chorioepithelioma. The nomenclature has been very much confused because of a lack of recognition of the various types of chorionic proliferation and the widely varying courses. A logical classification is now available.

According to Lynch, 2700 autopsies in a Vienna hospital disclosed 7 cases. Gordon reports 800 autopsies at Bellevue Hospital finding only one case. In 4500 abortions at Bellevue 21 cases of hydatid mole were seen. Until four or five years ago less than 600 cases of chorioepithelioma had been reported. Szathmary collected 11 cases from 53000 consecutive pregnancies—one in 4900. Nurnburger reports 33 cases of primary chorioepithelioma of the fallopian tubes.

Metastases occur very early and are practically always present in advanced cases. Ewing says among 450 cases of all types of chorioma collected by Polleson and Violet vaginal metastases occurred in 93, pulmonary in 133 and cerebral in 40.

Saenger, in 1888, was one of the first to describe the diagnostic symptoms. Gottschalk, I believe, was the first to describe its fetal origin, which was concurred in by Frankel and Durante, but it was Marchand, in 1895, who first recognized that the syncytial and Langhan's cells from the chorionic villi were the histological basis of the condition.

The typical histopathology is described by Schmidt as follows: "The typical malignant chorioepithelioma is composed of both epithelial cell elements of the chorion. They assume embryologic characters and biologic activities. The cells form masses and columns with marked vacuolation and necrosis. One or the other cell type may predominate. The connective-tissue core disappears entirely as a result of the proliferating activities of the epithelium. Mucous degeneration in the epithelial cells leads to the formation of vesicles. Fetal capillaries are absent. Syncytial wandering cells are often seen in the maternal tissue. The syncytial and Langhan's cells are in active proliferation, have many mitotic figures and show marked anaplasia. The highest potential malignancy seems to be conferred by the presence and activity of Langhan's cells. There is an invasion by active penetration of the vascular sinuses and destruction of the adjacent tissue. Metastasis takes place by emboli in blood vessels locally and distantly. The growth and meastatic foci cause the formation of a zone of reaction of the maternal tissues against the invasive malignant cells. It is composed of round and plasma cells, leucocytes and fibroblasts."

Chorioepithelioma and hydatidiform mole are closely related. They are best defined by Beasley: "A chorioepithelioma is a malignant neoplasm originating from the epithelium covering the chorionic villi of the placenta with undue proliferation of Langhan's and syncytial cells, characterized by easily provoked hemorrhage and widespread metastases." "Hydatidiform mole is a disease associated with pregnancy in which the chorionic villi are deformed in structure with undue proliferation of Langhan's and syncytial cells and presenting a mass of translucent grapelike vesicles and varying in size from a pin-point to 4 cm. in diameter."

Chorioepithelioma is defined by Black as "An undue proliferation and infiltration of anaplastic and dissociated syncytial and Langhan's cells characterized clinically by uterine bleeding and metastases." It is the most malignant member of this group of tumors. It usually occurs especially during the child-bearing period, but has been reported afflicting a woman of 70 years. I would doubt the occurrence of true chorioepithelioma at any time after the passing of all possibility of development of chorion. It occurs at any time from a few days to two years or longer after labor, abortion or hydatid mole. Curtis reports a case occurring 18 months after the expulsion of the mole.

The symptoms given by Schmidt, as propounded by Saenger, are as follows: "History of a preceding labor, abortion, or the expulsion of a hydatid mole; persistent hemorrhage from the uterus, continuing after a curettage; hemorrhagic putrid discharge and secondary infection following intrauterine instrumentation; progressive enlargement of the uterus; rapidly progressing anemia and cachexia; early metastases, especially in the vagina and lungs, with cough, dyspnea and hemoptysis; rapid course

*Read in a General Session of the Medical Society of the State of North Carolina.

with death within 6 or 7 months." A period of amenorrhea has been reported. Beach and Peightal, each reports a case in a 19-year-old woman. Beach's case was treated with 3600 milligram hours of radium, followed in ten days with x-rays, 5 exposures in a week. Six weeks later she had a panhysterectomy and at the edge of the muscle layer were found typical chorioepithelioma cells. Eighteen months later the patient was well and free from metastases. This was an early case and radium was applied 7½ weeks after the uterus had been emptied of a hydatid mole.

Ewing says: "Choriocarcinoma gives less definite clinical manifestations of its onset than do other forms of the disease. It follows normal labor promptly, or after a long interval, ectopic pregnancy, retained placenta, hydatid mole and abortion. The uterus is often only slightly enlarged. Many cases are first recognized by examination of curettings for hemorrhage. All pelvic symptoms may be wanting and the illness begin with hemoptysis, hemiplegia, peritonitis, severe vomiting, or the appearance of a vaginal tumor. Occasionally the disease masks a puerperal fever. Death results from cachexia, hemorrhage, pulmonary embolism, peritonitis or cerebral invasion. With or without hysterectomy the disease usually lasts from 6 to 18 months. Much more rapid courses are occasionally observed." Curtis and Oui report hysterectomies in 181 cases of chorioma of all types with 17 operative deaths. Curtis says he has been unable to find any record of operative cure of choriocarcinoma or chorioepithelioma, and most authors agree that chorioepithelioma destroys the life of the mother. A few cases have been reported of cure following hysterectomy and radiation, but it is doubtful if these were true chorioepitheliomas, or that they had run the full five-year period established for cures, when they were reported; and, if so, they were caught in the very early stage with complete removal of all the cancer cells before breaking down or metastasis. Lackner and Leventhal reported a case cured by hysterectomy and roentgen therapy.

As with other cancer, early removal, or destruction by radiation, is the only hope of cure. The younger the patient the more rapid is the course of the growth, as is well established in other forms of cancer.

Several cases have been reported of rupture of the uterine wall from chorioepithelioma, which led to a diagnosis of ruptured extrauterine pregnancy, and the true nature of the case was discovered only at operation.

While chorioepithelioma is rare, hydatidiform mole is rather common, and probably 10% of the cases of mole become chorioepithelioma (Leventhal & Saphir). The detection of metastases after operation is possible with the Aschheim-Zondek test before clinical signs manifest themselves, therefore in suspected cases the Aschheim-Zondek test should be repeated at frequent intervals to detect early matastasis. If the test is negative following the removal of the tumor you may be positive that metastasis or recurrence of the tumor has not taken place. In normal pregnancy the concentration of anterior pituitary-like substance in the urine begins to increase up to the 5th month, then gradually decreases until 8 to 14 days after delivery then almost entirely disappears; in hydatid mole the concentration increases progressively and rapidly. Schmidt says that lutein cysts of the ovary are observed in from 10 to 20% of the diseases and new growths of the chorion, but as soon as the mole has been expelled, or the chorioma has been removed, the cysts regress as they do after termination of a normal pregnancy. Histologic examination should be done on all tissues removed or expelled from the uterus to be on the lookout for malignancies. Chorioepithelioma never regresses, though it is possible to have regression of the metastases following removal of the uterus and radium or x-ray treatment. Schmidt says in summing up his report that if malignant chorioma does not recur within 6 months the patient will probably remain well, and if it does not recur within a year after the cessation of treatment, the patient may be considered cured.

Teacher reports that only 4.7% of cases appear with the first pregnancy and this increases rapidly to 38% of the cases in women who have borne 5 or more children. In a series of 188 cases 36% occurred after hydatidiform mole; 31% after abortion; 28% after labor and 4% after tubal pregnancy. The location of the tumor will be in the uterus, tubes, vaginal wall, ovaries or abdomen, depending on the character of the pregnancy. It seems that at least 50% follow upon hydatid mole. Percival says about 8% of hydatid moles undergo malignant degeneration and a history of mole is found in about 50% of all cases of chorioepithelioma. Dissemination is by way of the veins, after the manner of sarcoma.

The diagnosis is made by curettage and finding syncytial and Langhan's cells in the scrapings, and by the Aschheim-Zondek test. Curettage is not always certain as the tumor may be at a distance from the endometrium, and it is sometimes dangerous because the site of the friable growths may be perforated. Bleeding following labor or mole pregnancy is usually the first clinical sign of the possibility of chorioepithelioma. Sometimes hemor-

rhages begin weeks or months after the products of conception have been removed. A complete history will be of invaluable assistance in the diagnosis. The size of the uterus will depend largely upon the stage of the disease. Frequently the growth of the uterus is very rapid. The differential diagnosis is between uterine sarcoma and carcinoma, adenomyoma, uterine and placental polyps, endometritis, hydatidiform mole and normal pregnancy.

The quantitative estimations of gonadotropic factor in the urine in chorioepithelioma have been reported by Fels, Robert Meyer and Ehrhardt.

The prognosis has been pretty well covered in the discussion and is always grave, death usually supervenes in from 4 to 18 months, though a few temporary cures have been reported.

The treatment, if seen before metastasis, is by immediate hysterectomy followed by roentgen therapy if the patient's condition justifies operation; if not, roentgen therapy alone, with a grave prognosis in either event. The Aschheim-Zondek test should be repeated frequently for early metastasis as this is the only known method by which it can be detected. Abdominal hysterectomy is always preferable as it has been clearly demonstrated that trauma incidental to vaginal hysterectomy favors widespread metastasis.

Case Report

This case is reported because of its rarity, being the only case on record, as far as I have been able to ascertain by a careful search of the literature, of fully developed pemphigus complicating chorioepithelioma. The patient was referred to me by Dr. J. A. Elliott and he will shortly report the case from a dermatological standpoint.

The patient, lady, aged 43, married 5 years, nullipara, appeared in my office on September 7th, 1934. She gave a history of having had a miscarriage—July 31st, 1932, passing a hydatidiform mole and a 6-months fetus. She was curetted at the time to stop hemorrhage and remove the remains of the mole. Five weeks later the Aschheim-Zondek test was positive. Curetted again on Oct. 19th, 1932, and the pathologist's report of the scrapings was negative for syncytial or Langhan's cells. The Aschheim-Zondek test was repeatedly positive for the next 12 months. Last test and examination August 15th, 1933. This work was done by one of the leading obstetricians of our city and after this the patient drifted out of his hands. She reported that 2½ months before she came to my office, she had been examined by another obstetrcian and told that her pelvis was normal. No hormone test was done by this examiner.

Examination of the pelvis on the first day I saw the patient showed the uterus the size of a small grapefruit, fairly round, hard and smooth; the cervix looked and felt about normal though there was a cloudy jelly-like mucous discharge and there was a mild leukorrhea. Cultures and smears sent to the laboratory on this date showed a scanty growth of a streptococcus in the cervical cultures. The ovaries were not palpable and no tenderness or enlargement could be made out on either side. Patient reported regular menstrual period since her curettment in October, 1932, and she had been troubled with hot flushes. She had noticed a little dark discharge for a few months that looked like there might be some blood in it until March 1933 and had seen nothing at all since. No radium or x-ray treatment had been used, so this looked like the normal menopause. No backache or headache. Nocturia (2-3) always. The skin of the entire body, with the exception of most of the face and the palms and soles, was covered with blisters from the size of a match head to the size of the end of the thumb. No palpable glandular enlargement could be made out at this time. Dr. Elliott was taking care of the skin manifestations.

With this history I made a tentative diagnosis of chorioepithelioma of the uterus and advised immediate x-ray examination of the chest for metastases in the lungs. First picture made on the following day was unsatisfactory since, because of the blisters, the patient could not be persuaded to lie on the abdomen and only one chest plate was made. However, this showed very definite metastases in both lungs, especially in the upper lobes. The next picture, made on September 12th, was not as satisfactory as desired for the same reason, but still showed definite signs of metastases. The picture on September 15th was very positive and the one made on October 2nd showed large metastatic areas in both lungs. The patient's skin condition prevented any radical treatment, and this condition grew rapidly worse until the end. Some of the blebs showed on the plates which made it doubtful to some of the consultants whether these might not be casting the shadows which were faintly discernible in the lungs on the first plate, but these could be easily mapped out later on and showed the lesions on the skin and those in the lungs plainly differentiated.

The Aschheim-Zondek test done by Dr. Todd the next morning after I had seen the patient was positive and remained so throughout the course of the disease.

Physical examnation of the chest revealed a normally functioning heart and lungs. Palpation, percussion and auscultation of the lungs revealed nothing abnormal. The urine was negative both chemically and microscopically. The white count was 11,800, reds 4,170,000, Wassermann reaction negative.

There is always a possibility of pregnancy in any enlarged uterus during the child-bearing period and after consultation I did a curettement on September 11th, under gas anesthesia. The small amount of tissue obtained was sent to the laboratory, and the following report returned: "Necrotic decidual cells; no chorionic villi or syncytium seen. No evidence of malignancy or pregnancy."

That neither syncytial nor Langhan's cells were fond by either of the pathologists who examined the specimen was due to the fact that the tumor growth had not broken through the uterine mucosa, as was demonstrated at autopsy.

SUMMARY

The discovery of this case in an advanced stage with the concomitant pemphigus is of unusual interest.

The demonstration of metastases in both lungs in the beginning made the prognosis hopeless.

The Aschheim-Zondek test, using the Friedman modification, with one one-hundredth of the usual dose as used in the pregnancy test was positive from the beginning and remained so throughout the course of the disease.

The patient walked into my office for examination on September 7th and was immediately sent

to the hospital where the disease progressed rapidly until the end five weeks later.

A complete post-mortem examination was done by Dr. L. C. Todd and will be reported by Dr. J. A. Elliott in his paper on pemphigus.

In closing I wish to read you the summary of a recent article by Bernhard Zondek, of Jerusalem, on Gonodotropic hormone in the diagnosis of chorionepithelioma as reported in the *Journal of the A.M.A.*, Feb. 20th, 1937:

1. In the pathologic placenta (hydatidiform mole, chorionepithelioma) the production and excretion of gonadotropic substance may be immensely increased. The hormone appers in greatly increased amounts in the blood, urine and spinal fluid.

2. A diagnosis of hydatidiform mole can not be considered as established unless, in repeatedly performed examinations, at least 200000 mouse units of luteinizing principle is found in the urine and, in addition, a positive luteinizing reaction is obtained from the spinal fluid, preferably diluted. It is necessary to rule out toxemia of pregnancy, as in this condition large amounts of luteinizing substance are also excreted in the urine. However, in the latter case only a follicle-stimulating effect is obtained in spinal fluid.

3. If the pregnancy test still remains positive six weeks after the discharge of a hydatidiform mole, and if the content of gonadotropic substance in the urine has progressively increased in this period, it suggests a diagnosis of chorionepithelioma particularly if a positive reaction is also found in the spinal fluid. For confirmation of the diagnosis, exploratory curettage is necessary. If the result of the histologic examination is doubtful, the result of biologic assay of the urine and the spinal fluid is of great significance.

4. In case the pregnancy test has become negative after the discharge of the hydatidiform mole and once more becomes positive within some time there is either a new pregnancy or a chorionepithelioma. Differential diagnosis must be established by clinical observation and, in addition by quantitative urine assays.

5. The assay of urine for gonadotropic substance is of importance not only for diagnosis but also for prognosis in chorionepithelioma. If the pregnancy test has become negative following therapeutic measures, and if luteinizing substance occurs once more in the urine, this indicates that the malignant process is proceeding. Apparent clinical improvement may often be deceiving in such cases.

6. A considerable reduction in excretion of follicle-stimulating hormone occurring suddenly without therapeutic measures is clinically a threatening sign, although when this occurs following therapy it is usually considered a favorable sign.

7. As the normal placenta is rich in gonadotropic material, the presence of 800 mouse units of luteinizing substance per gram of fresh tissue obtained by curettage must be established before one can diagnose a malignant condition. If 100 mouse units per gram is found in extrauterine tumors, this indicates that the tumor is a metastasizing or extragenital chorionepithelioma.

8. Chorionepithelioma of the testicle or testicular teratoma with chorionepitheliomatous inclusions lead to a strongly increased production and discharge of follicle-stimulating and luteinizing factors. This increased excretion may also occur occasionally with other testicular tumors. It is absent in disgerminoma. Tissue assay of testicular tumors furnishes valuable information as to the nature of the tissue. Disgerminomas do not contain gonadotropic substance; the chorionepitheliomatous parts contain much of this factor.

9. The anterior pituitary in normal pregnancy as well as in chorionepithelioma and in malignant testicular tumor contain little or no gonadotropic hormone.

—614-616 Professional Building

Asheville Annual Tuberculosis Seminar to be Held in July

The Buncombe County Medical Society will hold its third annual tuberculosis seminar the week of July 10th, 1939. Our clinical facilities for 1939 are even greater than those of 1938, which were considerably more than those of 1937, with the adjacent government and state hospitals. We shall also continue the policy of making the work as practical as possible, with particular emphasis on early diagnosis and modern treatment. The class will again be limited to twenty physicians and we hope to have a full attendance.

All of the physicians who have taken the previous courses have been highly enthusiastic, saying the work had exceeded their expectations and amply repaid them for trips from such distant states as Mississippi and Florida. One who had just taken the long-established course at Saranac, said that our's was every bit as good. Another, an undergraduate, has written since that he learned more here than he had in his senior year.

It is hoped that physicians in those areas where tuberculosis is still quite prevalent and from which Asheville receives hopelessly advanced cases, which should have been diagnosed earlier, may be reached. We should like to give preference to such candidates but the class will be made up from the names submitted in the order in which they are received. Accordingly, those who expect to attend should apply as soon as possible. The fee will be ten dollars.

The course will consist of one week of intensive instruction, with demonstration of pathological specimens, close-up clinical work with patients in history-taking, symptomatology, methods of physical examination, radiography, laboratory analyses and all forms of treatment; including thoracoplasty and orthopedic measures. Study will not be confined to pulmonary disease but will embrace tuberculosis in all its manifestations: *i.e.*, as it involves the larynx, the intestine and the genitourinary tract; and from the standpoint of the gynecologist, pediatrician and anesthetist. Instead of formal lectures intimate round-table discussions will be held, but most of the time will be spent in actual office and hospital procedures.

Committee—

DR. KARL SCHAFFLE ..... *Chairman*
C. HARTWELL COCKE ..... *Internist*
JOSEPH B. GREENE ..... *Laryngologist*
WM. PINCKNEY HERBERT ..... *Thoracic Surgery*
THOMAS R. HUFFINES ..... *Urologist*
WALTER JOHNSON ..... *Gastroenterologist*
J. LaBRUCE WARD ..... *Pediatrician*

The first American Congress on Obstetrics and Gynecology is to be held at Cleveland September 11th-15th. This meeting will provide the first opportunity for all the interested groups of workers to assemble. Doctors, nurses, hospital administrators and public-health workers will meet and discuss their problems and correlate their ideas. A large and representative attendance is necessary to assure the success of this meeting. Already more than 1400 advance registrations have been received.

Dr. W. R. Barney, 1422 Euclid Avenue, Cleveland, is Chairman of the Local Committee on Arrangements.

Clinic

Conducted By
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North Carolina

BEFORE taking up any case in detail, I wish to mention two curiosities in breast conditions that have come under my observation, *viz*., unilateral hypertrophy of the female breast and abscess of the male breast. The latter I believe to be distinctly rare.

On May 26th, 1916, a 63-year-old woman complained of pain and swelling in the right side of her face. She stated that her symptoms had begun 3 weeks previously. There was marked swelling in the region of the right antrum, and the area affected was red, hot, hard and tender. There were bad teeth in the upper jaw below this. The acuteness of the trouble made me consider this an abscess of the antrum. An excellent dentist agreed with the diagnosis, but thought extraction of the teeth should be deferred, as that would not give adequate drainage, and suggested that I have a rhinologist see her with a view to removing a part of the inferior turbrnate and draining it by that route. Dr. J. W. Austin saw her and put in a trocar and cannula, but got no pus. He then suspected a sarcoma. A general surgeon saw her and thought it an abscess. Her temperature at this time was 100.2, pulse 102, respiration 22. The next day the surgeon extracted the teeth from the right upper jaw and then drilled up into the antrum through the alveolar process, but obtained no pus. A piece of tissue removed for diagnosis was found to be carcinomatous. It was considered impossible to remove the disease process completely, so she was given analgesic treatment and irrigations until her death.

Diagnosis—Carcinoma of right antrum.

A 46-yr.-old Negro farm laborer complained on April 18th, 1930, of soreness in the right hypochondrium and right iliac fossa. He stated that he began to get sick at his stomach four months previously. He had much nausea and vomiting and saw a physician who said he was jaundiced and gave him calomel. He got no better, so consulted a Negro physician in High Point who treated him without benefit. Then another physician saw him and treated him, also without benefit. The patient relied for a period of six weeks on barberry root, rhubarb, wild cherry tea, salts etc. He also took some black draught. His bowels moved regularly, but the stools were sometimes yellow and sometimes white. He felt sore in his hips and also in the epigastrium. He had lost 27 lbs. in 4 months, dropping from 150 to 123. He never vomited any blood. His past history, habits and family history threw no light on his condition. He did not use alcohol.

His eyes showed intense jaundice, which he said had been constant for 4 months. Mucosae were pale. There was marked ecthyma wherever he could scratch, the itching being due to the jaundice. Even though a dark Negro, an intense yellow tinge could be noted in his skin. His abdomen showed a very large smooth mass, probably either an enormous liver or right kidney, occupying most of the right side and middle of the abdomen. It was not markedly tender. Physical exam. otherwise negative, including rectal digital examination. The urine was blackish green with bile, but otherwise negative.

Tentative Diagnosis: Tumor, probably carcinoma, of either liver or right kidney. If kidney, bile ducts probably obstructed.

The blood showed a moderate anemia, but nothing else of importance. The Wassermann was negative. Fluoroscopy by Dr. P. W. Flagge shows mass to be liver. However, an exploratory operation was felt to be a last, albeit a forlorn, hope. He delayed this for a month, then went into the Richardson Memorial Hospital in Greensboro. Dr. Parran Jarboe did a laparotomy. The tissues were green with bile. The liver was enormously enlarged, but smooth, and so was the gallbladder. The omentum was densely adherent to the gallbladder. Dense adhesions around pylorus, duodenum, cystic duct and part of gallbladder. The gallbladder ruptured during operation and discharged a lot of very thick black bile. The partially collapsed gallbladder was removed with several ounces of tarry bile. There were no stones. While the liver was grossly smooth on inspection, there was a large area of hardening in the lower part, and close inspection and palpation revealed minute nodules on its surface. A piece of liver tissue was removed for histologic study. The head of the pancreas was of stone-like hardness and nodular. Wound closed with many drains. There was intense capillary bleeding throughout the operation.

Diagnosis: Carcinoma of pancreas with metastases to liver.

On June 10th, 1917, a 26-yr.-old farmer complained of abdominal pain. He stated that the preceding Christmas his abdomen got to hurting, and it hurt when he would bend over and raise himself up again. His appetite was good and he had no nausea or vomiting. He was very constipated and took syrup of figs, but with rather unsatisfactory results. Defecation was rather painful (abdominal pain). No blood from bowels. He had had a dry hacking cough for a week without

hemoptysis. He had had no chills, but had a slight fever, he thought, in the afternoon, recently. Also had headache in vertex of late. He had noted slight dyspnea on getting up in the mornings and took to his bed where he had stayed for a month before I saw him. He had recently spent 10 days in a hospital without benefit. He stated that he had lost 40 lbs. in 5½ months. Further details of his history threw no further light on his case.

Physical examination showed the patient lying on his back, face pale except for his cheeks, which were flushed. He had large brilliant eyes, was moderately emaciated, voice a little weak, but its quality was about as usual, he said. There was tenderness at the junction of the larynx and trachea. The thyroid was moderately enlarged and contained a nodule the size of a pea on its right border. His skin was warm and he was sweating without excessive covers. He had a very long emaciated chest. Expansion was poor on both sides, and breathing was almost purely abdominal in type. The chest was otherwise essentially negative except for an occasional dry rale in the right infraclavicular space. The abdomen showed marked rigidity and tenderness of the right rectus muscle. but there was no special tenderness at McBurney's point. T. 98.6, P. 74, R. 24. Finger nails markedly curved. Otherwise physical exam. showed nothing significant. A surgical consultation was sought, but the patient declined to have one.

About 3 months later, it was evident that he had a growth in his neck which was becoming adherent to the skin and seemed to involve the whole thyroid and surrounding tissues. There were many rales in the right infraclavicular space. A mass in the mediastinum gave an area of dullness continuous with the mass in the neck. The liver appeared much enlarged and nodular. He was referred to Dr. J. W. Long, who considered that he had an inoperable malignant growth of the thyroid.

Sept. 15th, 9 days later, his hands were very pale, though the nails seemed of good color.

Sept. 17th he developed intractable hiccough and was obviously moribund. The hiccough continued the next day, he was weaker and vomited two quarts of very dark green fluid twice.

Sept. 19th the hiccough had checked some and he was more comfortable, but he died the following day.

Necropsy.—Permission given to open the abdomen only. Extreme emaciation. Thyroid hard and adherent to enlarged glands in neck. Stomach enormously dilated. Small bowel and colon diameter of little finger and empty of gas or fluid. Stomach occupies entire front of abdomen and is full of bile. Liver studded with pale hard nodules umbilicated in center. Pancreas hard. Peritoneum normal. Kidneys and spleen showed passive congestion. Intestines, except for obstruction just below ampulla of Vater, normal. Urinary bladder empty, tissues desiccated. A frozen section of one of the nodules in the liver showed it to be a medullary carcinoma.

Diagnosis:.—Carcinoma, medullary, of thyroid, extending to all lymphatics of neck, also to mediastinal glands (from percussion findings and symptoms) and metastasizing to liver and pancreas causing obstruction to duodenum.

Facts About Scorpion Stings

(M. L. Kent & H. L. Stahnke, Mesa, Ariz., in *Southwestern Med.*, April)

Many people of Arizona do not consider the scorpion dangerous. Yet more deaths have resulted from this arthropod since 1929 than from any other venomous animal. The average layman is not aware of the existence of more than one species of scorpion. There are 3 common species—the striped-tailed, the giant hairy and the yellow slender-tailed.

Rats stung by the 3rd sort (the dangerous) show paralysis of hind feet, complete exhaustion, breathe with difficulty and succumb. Death seems to be due to edema of the lungs and exhaustion.

There have been 75 cases of scorpion sting treated in the Southside Hospital, Mesa, in 7 years. The reaction of the human is quite similar to that of the laboratory animal.

Symptoms are invariably more pronounced in children, unless treated at once; are almost always fatal to infants under one year of age. They are extremely dangerous to older children, and may cause serious inconvenience to adults.

In cases that recover, the acute symptoms subside in 12 hours or less. Numbness at the site of sting is usually experienced. ne patient developed a tachycardia lasting 2 weeks.

Use morphine with extreme caution. Barbiturates are more effective and less dangerous. In pulmonary edema, atropine is indicated along with general supportive measures. Compresses of a fairly concentrated ammonium hydroxide solution have been found quite helpful if applied within 10 minutes.

During the past 18 months, several of the more severe cases have been treated with scorpion serum with results that are encouraging.

Fixation of the Skin and Jugular Vein With a Towel Clip to Facilitate Venipuncture

(J. S. Lundy in *Proc. Staff Meetings Mayo Clinic*, April 12th)

The patient lying on his back, his head is turned laterally, and an assistant compresses the base of the external jugular vein with a finger. A Backhaus forceps (towel clip) is used to transfix the skin and jugular vein at a point halfway up the neck. The handle of the towel clip is held in one hand and traction is made cephalad which stretches the jugular vein. The needle is inserted into the jugular vein midway between the clamp and the clavicle.

This procedure has facilitated the use of the jugular vein during operations when the use of the arms or legs for venipuncture interferes with the stance of the surgeon or his assistant. The clamp on the vein and the needle in the vein are removed at the termination of the transfusion.

Surgical Observations

A Column Conducted by
THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

CESAREAN SECTION

A cesarean section should never be done unless this method of delivery is clearly indicated. This operation should always be performed by an experienced surgeon. The greatly differing opinions held in various sections regarding the indications are due, no doubt, to the fact that the results obtained by cesarean sections have been much better in some localities than in others. In few surgical procedures does so much depend on the skill and discrimination of the individual surgeon, and the favorableness of the conditions under which he does his work.

Every pregnant woman who presents a complication should be thoroughly examined with attention alert for discovery of the particulars of the pregnancy, of possible disease of the fetus; and of possible disease of the mother as a part of the pregancy, or of previous disease of the mother as influenced by pregnancy and bearing on the coming delivery. A grave responsibility rests upon those who make the decision.

Among indications for cesarean section are:

1) Deformity of the bones of the pelvis which may interfere with the birth of the child is one of the most common. Careful pelvic measurements, aided by x-ray methods at our command, should enable us to get measurements of the fetal head and the pelvis accurate enough to enable us to decide wisely whether or not delivery should be undertaken by the usual method. Where delivery will be very difficult, and certainly where it is practically impossible without great danger to the mother and child, a cesarean section is clearly indicated.

2) Central placenta praevia is a positive indication for cesarean section, and marginal placenta praevia demands section except in rare instances.

3) Pregnancy in elderly women who have never borne children is another common indication for cesarean section. In a great proportion of such cases delivery by section is really the most conservative method, being the method promising the best as to life of mother and child, and particularly as to future health of the mother. Sometimes a moderate contraction of the pelvis is observed in these patients. This makes an absolute indication for surgery.

4) Heart disease or general disease which makes it impossible for a patient to stand the strain of an ordinary delivery. Delivery by this method does not throw anything like the amount of strain upon the heart as does an average delivery by the normal route.

5) In premature separation of the placenta cesarean section should always be considered.

6) Tumors of the cervix or pelvis, which would act as obstruction to birth of the child.

7) Fetal deformity. The head of the child may be too large, or the child may be just too large for even a normal pelvis.

8) In eclampsia many lives are being saved by doing cesarean section. Of course, the milder cases may be best treated without resort to surgery; yet we must remember that emptying the uterus is sometimes the only means by which we can save the patient's life and at the same time have a good chance of saving the child's life.

Doubtless many cesarean sections have been done for insufficient reasons; but criticism of some who have done cesareans in cases in which they were not indicated should not cause us to withhold this method of delivery from a woman whose life is at stake, and who might perish under any other method of delivery.

Another thing, we must consider the fact that we may have a difficult delivery in the usual way with irreparable damage to the child's central nervous system. This should be kept in mind in making a decision in doubtful cases.

The following case illustrates the value of cesarean section in the case of a prolapsed cord: A young woman pregnant with her third child, at 8½ months had a premature rupture of the bag of water. The part of one cord prolapsed. She was pregnant with twins. Replacement of the cord was impossible. Pulsation had practically ceased. Evidently this was a case in which the ordinary means of delivery could not be considered. The life of one child, and possibly of the other, was at stake. An immediate cesarean section was done and the mother delivered of two healthy children. The one with the prolapsed cord did not breathe well at birth but after a few minutes was all right. The mother and both children left the hospital in health. Had a cesarean section not been done, certainly one of the children would have died, and possibly both.

Another case that illustrates the possibility of cesarean section was that of a young woman pregnant with her first child. She had multiple fibroid tumors of the uterus which made delivery by the usual method impossible. The patient was very anxious to have a child. This was her only hope. After some deliberation, we allowed her to continue with the pregnancy and have a cesarean section near term. At the time of the cesarean section the fibroid tumors were so numerous and large that it was best to perform a hysterectomy, which was done. The mother and child made a good recovery.

In any pregnancy complicated by difficulties in delivery, only careful consideration of the situation and careful examination will enable a doctor to make the proper decision. Birth injuries to the mother and to the child should always be given due consideration. On the other hand, it should always be remembered that cesarean section should never be done by anyone except an experienced and careful surgeon, and then only where the facilities are the very best.

Whether or not a woman should be allowed to have more than one child by cesarean section is a problem. In my opinion a healthy woman with only some obstruction to the birth canal, may be allowed to become a mother at least twice by this method, and I have delivered a number of women three times by cesarean section. Whenever it is felt advisable that no further pregnancies occur, the tubes may be tied off and coagulated.

Patients who are to have a cesarean section should not receive morphine or other opiate before operation. This interferes sometimes with the breathing of the child and makes it difficult for respiration to begin. Under spinal anesthesia, the patient goes through the operation awake and comfortable, and there is very little gas-formation afterward.

Today, in the hands of experienced surgeons working under the best of conditions, cesarean section has an extremely low mortality, even in extremely difficult cases. There is no doubt but that the lives of many who would otherwise perish are saved by this operation, major though it be, and that many more are thus spared the suffering and disability that would have resulted from injuries sustained in any other form of delivery.

Decompression of the Bladder

(Hamilton Bailey, in *Practitioner*, Feb., via *Modern Med.*, April)

Anchor an inlying urethral catheter by using 4 pipe cleaners sterilized by boiling, strapped with one-inch adhesive around the base of the penis. The four ends are then brought to the catheter and fixed there with very narrow strip of adhesive in such a way that each pipe cleaner has a definite arch and stands well away from the glans. The ends at the base of the penis are then bent back and cut off.

To control the outflow of urine an intravenous dripper is employed. With a thumb-screw the rate of escape of urine is controlled precisely.

When urethral catheterization is impossible or undesirable suprapubic catheterization is the best alternative. A mushroom catheter, introduced into the bladder by means of a trocar, will assure the escape of only a few drops of urine and retention of the catheter. In acute retention with overflow, the bladder should be decompressed very slowly.

The statement that the Chinese pay their doctors to keep them well instead of to cure their illnesses has no basis in fact.—J. D. Laux, in *Hygeia*.

DEPARTMENTS

GENERAL PRACTICE

Wingate M. Johnson, M.D., *Editor*, Winston-Salem, N. C.

MEDICINE IN MODERN SOCIETY, by David Riesman (Princeton University Press, $2.50), a volume of 226 pages, developed from the Vanuxem lectures by the author at Princeton, is hard to classify, though very easy to read. It contains enough medical history to be almost a brief history of medicine, although its primary mission is to explain modern medical discoveries to laymen, in simple, clear-cut language. It also discusses ably and interestingly such subjects as Medical Education, Medical Ethics, Superstition and Cults, Preventive Medicine, Medicine as a Career, and The Social Outlook in Medicine.

Like all Dr. Riesman's writings, this book is characterized by a clear, limpid style, keen observation, logical thinking, and a delightful sense of humor. In comparatively small space it contains a vast store of information.

The only chapter with which I can not agree whole-heartedly is Chapter 14, "The Social Outlook in Medicine." Here the author shows quite plainly his sympathy with the views of the Committee of Physicians which grew out of the American Foundation report, *American Medicine*. He gives forcefully the arguments used by that group, which are familiar to most of us. Those who heard Dr. John Peters at the Duke Centennial last October would recognize them. To read the slighting way in which Dr. Riesman brushed aside the doctor-patient relationship as of little importance would have been more of a shock had I not known him well enough to know that he himself daily refutes his own testimony.

Americanism and the Medical Profession

Radio Address given during "Americanism Week" on February 15th, under auspices of Winston-Salem Junior Chamber of Commerce.

When asked to discuss the subject, Americanism and the Medical Profession, I began to reflect upon the qualities that might be considered distinctively American. With the help of a few long-suffering friends, I made a list of ten characteristics that we agreed belong especially to the people of America. It is interesting to note that, after the list was complete, a friend called my attention to the fact that an Englishwoman, Vera Brittain, in her book *Thrice A Stranger*, had enumerated almost exactly the same qualities. These are—not necessarily in order of importance—democracy, love of liberty,

tolerance, adaptability, self-reliance, individuality, independence, coöperation, kindness or neighborliness, and intellectual curiosity.

It is hardly necessary to dwell at length upon these qualities, nor to offer long arguments for them as distinctively American. Democracy is virtually synonymous with Americanism; and the love of liberty or freedom is the prime factor in democracy. Tolerance of others' opinions certainly should mark a nation whose pioneer fathers left their own countries to be free to worship God as they pleased. Adaptability to new living conditions, to new methods of agriculture, and to new forms of government made our nation possible. The necessity of depending upon their own efforts and of overcoming the forces of Nature made our forefathers learn to rely upon themselves to a great extent, and made them learn to think out their own problems independently. While this training made them individualists—whether rugged or not—their fewness of numbers also taught them the necessity of coöperation and brought about in those earlier settlers a spirit of kindness. It was hard not to be good neighbors. This quality is now seen when any major disaster occurs in any part of this country, or of the world. The United States is almost invariably first to offer a very substantial helping hand, not only to its own citizens, but to those of other countries.

Finally, the quality of intellectual curiosity is responsible for much of America's progres in scientific discoveries. It is hard for the typical American to outgrow the small boy's desire to find out what makes the wheels go 'round.

Without undue boasting, it seems to me that the medical profession can claim as many of these typical American qualities as any group in the country—if not more. Let us take them one by one and see if this claim is warranted.

It is hard to imagine a more genuinely democratic individual than the average doctor. His practice knows no social, political, racial, nor economic lines. No man comes nearer knowing how both halves of the world live. No man knows better that

> "the Colonel's Lady and Judy O'Grady
> Are sisters under their skins!"

for literally as well as figuratively he has seen under the skins of both. Not only individually, but collectively, is our profession democratic. In spite of the sneers of some to the contrary, there is no more truly democratic body in the world than the House of Delegates of the American Medical Association. Having been a member of it for some years, I do not speak from hearsay.

Tolerance is preëminently a medical virtue. Doctors take patients as they are, and try to help them, without regard for the cause of their disability. If a young fellow comes to a doctor with a venereal disease, he gets treated without a sermon on immorality. The doctor learns to look back of the habitual drinker's lapses to unsound inheritance, to the mental quirk or the faulty upbringing or the unhappy surroundings that drive him to seek a temporary escape.

No profession requires greater adaptability than does that of medicine. Every textbook used in his medical course, except possibly Anatomy, is out of date within five years after graduation. New conceptions of disease, new diseases, and new remedies follow one another with such bewildering rapidity that a doctor must learn to change ideas oftener than he does automobile tires.

The nature of a doctor's work makes him learn to rely upon himself. It may be of general interest, however, to recall that this same quality of self-reliance was responsible for a thorough housecleaning of medical education by the American Medical Association. At the beginning of this century there were more than 160 medical schools in the country, most of them mere diploma mills. With no legal authority, and with only the power of propaganda used in a worthy cause, the number of schools was reduced more than half, and only the fittest survived. Now the public has the assurance that a medical graduate has been properly trained.

The doctor works so often alone that he is of necessity an individualist. This may account for both good and bad traits. It is often remarked that lawyers quarrel with other lawyers only when paid to do so, while doctors fight each other gratis. With the rapid multiplication of medical societies and post-graduate courses, however, giving individual doctors greater opportunity to meet on friendly terms, we do not hear nearly so much of the old spirit of jealousy among them.

Certainly no profession makes its members more independent of others' opinions. While the rank-and-file of us have the greatest respect for the leaders of our profession, the doctor learns not to accept anybody's authority without question. For any man to propose a medical theory is to stimulate hundreds to make clinical investigations to confirm or disprove. The creed of the medical profession has been summed up by Oliver Wendell Holmes: "Not to take authority when I can have facts; not to guess when I can know."

It must be confessed that this indifference to the opinion of others has been carried too far and has much to do with the widespread demand for the socialization of medicine. Doctors have grown so accustomed to being misunderstood and having laymen question our system of ethics that we have

doubtless seemed to be self-righteous when we were only bewildered. This attitude of dignified aloofness offered the same sort of target that a silk hat does to a boy with a snowball. A serious attempt to explain our system of ethics to the public might have helped our cause. The best explanation I can offer in a few words is that medical ethics is simply an honest effort to apply the Golden Rule to the practice of medicine—not only as it concerns a doctor's relations to other doctor's but also to his patients.

Just as our forefathers, in spite of their independence and individualism, learned the necessity for coöperation, so have doctors. The team-work that has made possible such a marvel of efficiency as the Mayo Clinic may also be seen in Winston-Salem and even in smaller communities. In no country in the world does coöperation between members of the medical army work to better advantage than in the United States.

The kindness or neighborliness of the doctors is manifested by the fact that the physicians of the United States give at least a million dollars a day in free service. A recent estimate showed that the doctors of Winston-Salem gave at least $450,000 last year.

Intellectual curiosity is, of course, responsible for virtually all medical discoveries. Just as important for true scientific progress is rigid intellectual honesty. It is said that when Darwin was carrying on his monumental research which was the foundation of the evolution theory, he forced himself to write down in detail every observation that did not fit into the theory he was evolving: for he knew that he was far more apt to forget the unfavorable than the favorable.

Naturally we medical men are keenly interested in the efforts now being put forth to socialize the practice of medicine; but all other self-respecting citizens, who want to maintain their independence, should also be interested, for the drive for socializing the country will hardly stop with the medical profession. Let it be remembered that socialized medicine began in Germany in 1883, and was the entering wedge for totalitarianism in that country. In passing it may be recalled that when socialized medicine was begun in Germany, the first tax levied was ¾% for the employer, 1½% for the employee; and that it is now about 10% each.

Socialized medicine would sacrifice democracy, by substituting the bureaucratic rule of petty politicians; self-rediance, by making doctors government employees and by assuming that the workers of America do not have sense enough to spend their own income; individuality, by regimenting us all into a political machine; independence, by taking away the freedom of doctors to earn a living by their own efforts and of patients to have the doctors of their choice; tolerance, by making patient and doctor mutually distrustful; neighborliness, by passing the buck to Washington; and intellectual curiosity, by the strangling coils of red tape.

If the people of America should become responsible for the socialization of medicine, they will find too late that they have sold an excellent medical birthright—the best in the world—for a very sorry mess of pottage. If the day ever does come when the government does take over the practice of medicine, God pity the patient!

TUBERCULOSIS

P. P. McCain, M. D., *Editor*, Sanatorium, N. C.

The Treatment of Pulmonary Hemorrhage Due to Tuberculosis

The great majority of pulmonary hemorrhages would stop without any medication, and this explains why such a large variety of remedies are credited with being beneficial in the control of pulmonary bleeding. It is just another instance of "post hoc ergo propter hoc."

Hemoptysis is probably the complication which every patient with tuberculosis fears more than any other, and the thing of first importance is for the physician to try to allay the patient's fears. Patients rarely die from the loss of blood; of the few who do, most die rapidly from the rupture of a large vessel, usually before the physician arrives. The physician should assure the patient that the bleeding will soon stop and that there will be no serious consequences. An attitude of self-possession and assurance on the part of the physician will do more than drugs to calm the patient's fears.

The patient should be placed and kept at complete bed-rest. He should not even raise up on his elbow to expectorate the blood. He should be cautioned to restrain his cough as much as possible. The diet should consist of milk, eggs, gelatine, cereals and other light and easily digestible foods. The bowels should be kept open with mineral oil or with mild cathartics if necessary. The application of an ice-bag over the area from which the blood is coming may be of some psychological, and possibly of some therapeutic, benefit. Through a frequent change of containers the blood should be kept out of the patient's sight as much as possible and any blood-stained linen should be covered with clean towels.

In hemorrhages of no more than a few ounces patients really do not need any medication at all. Since the great majority have such profound faith

in drugs, however, it is usually necessary to use some medication.

Morphine should not be used at all, for its use is fraught with grave danger. It reduces the sensitiveness of the bronchial mucosa to such an extent that the bacilli-laden blood and sputum are not promptly expelled, but drain to the dependent portions of the lungs resulting often in a spread of the disease and not infrequently a tuberculous pneumonia. No stronger sedative than a fourth of a grain of codeine should be used and it is better not to use even a dose this large unless the patient's fears cannot be allayed otherwise, or unless his cough is very troublesome.

It is possible that drugs intended to lower the systemic and pulmonary blood-pressure may be useful. The pungent odor of amyl nitrite and the immediate sensation of warmth caused by the dilation of the superficial blood vessels by this or the other nitrites, has a good psychological effect. Also, atropine, nitroglycerine or veratrum viride may, by lowering the blood-pressure, be helpful in preventing repeated hemorrhages.

Remedies intended to increase the coagulability of the blood are frequently used and may do some good. The various hemostatic serum preparations, such as coagulen, and different preparations of calcium, are the drugs most frequently used for the purpose. The gluconate is probably the best form of calcium to use. It is dispensed in ampoules for intravenous use to obtain more rapid effect and in tablet form to be administered over a period of days for a prolonged effect.

Patients who have lost considerable blood, from a single or repeated hemorrhages, may be helped by blood transfusions.

Pneumothorax is by far the most effective of all measures for the control of pulmonary hemorrhages. If it is known which lung the bleeding is coming from pneumothrorax should be given immediately. Relatively large initial doses of air—500 to 700 c.c.—may be given and may be repeated the same day. If a good collapse can be obtained there is rarely any further bleeding. If adhesions permit only a partial collapse, good results may be obtained by supplementing the pneumothorax with a temporary phrenic-nerve paralysis. The phrenic operation alone may be beneficial when pneumothorax can not be given.

If the lung condition has not been determined, or if the lesions are bilateral, an x-ray film should be made with a portable machine taken to the patient's bedside, in an effort to determine from which side the bleeding is likely coming. At times in patients with bilateral cavitation it is impossible to determine the source of the bleeding, and it may be necessary to give bilateral pneumothorax. If, on account of adhesions, a satisfactory collapse of the lung can not be obtained, pneumo-peritoneum may help to control the bleeding. In an occasional patient with a unilateral lesion it will be necessary to resort to a thoracoplasty. At present such a large proportion of tuberculous patients under treatment are getting some form of collapse therapy that hemorrhages are being prevented by the closure of cavities and are nothing like so common as in years past.

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

Hospital Ethics

Most of us have heard of medical ethics of one kind or another since the very beginning of our professional lives. If we did not know before of ethics in general by name, we knew it in practice, for ethics means nothing but the science of the morally right. Sometimes one is blinded to the thing that is closest to the eye. The Editor of this Department is inclined to believe that hospital ethics so far as one hospital to another is concerned is a myth.

Let us begin immediately to admit existing facts without undue argument. No one or two individuals are responsible for the method of employing nurses, dietitians, superintendents etc. in this country; but, collectively, we are all responsible, and to my mind something should be done about it.

One of the very unpleasant jobs of a hospital administrator or superintendent is that of discharging employees, and one of the most difficult jobs is that of locating a satisfactory new employee to take the place of the person dismissed. It should not by any means be considered that the employee is always at fault when a change is made.

There are many disturbing forces over which the employee has almost no control. There are dispositions and personalities which are so incompatible as to make it impossible for a very fine dietitian to work harmoniously with a business manager. There may be a grudge harbored in the heart of the superintendent of nurses against an instructress, who might be entirely satisfactory to everyone except that superintendent.

A hospital organization is so set up that the superintendent has full authority and if friction does arise it has been the policy, and no doubt a wise one in most instances, for the governing board to decide in favor of the superintendent. And so it goes all the way from the head executor to the lowest paid employee in the hospital. The

one having immediate authority can cause the dismissal of an employee, even though he has tried his best to work under existing circumstances. I have seen this happen in many instances.

Now let us discuss the real subject of our article. Ethics between hospitals is just as vital as in the medical profession, the teaching profession or anywhere else among professional individuals. I do not see why one hospital should write to the superintendent of another hospital and offer her a job without first consulting the hospital administrator or the executive officer of the board. The mere fact that she is now employed should mean something to any hospital which is looking for a superintendent. Upon superficial analysis this might not sound altogether fair to employees but when broken down and thoroughly analyzed it is the fairest way of all.

The superintendent of one institution might be almost perfect in her present position and her success gain for her a high regard in her profession and in that community generally; but when she changes her position she may meet a situation so entirely new to her as to make it impossible for her to perform its duties with satisfaction to herself or her new employers. Perhaps a bookkeeper who has been employed at this hospital for twenty years, or a dietitian whose brother-in-law happens to be in a position of authority on the board, is antagonistic. When she begins to reorganize a department that has been in the hands of one whose political strength was used rather than merit in obtaining a position, then and there a huge problem arises.

It would have been far better for her had the hospital administrator where she was first located been consulted and problems that she had had experience in settling discussed. Her former employer knows her quite well. He knows in detail her liabilities and assets. He is best informed and best qualified to predict as to whether or not she would be successful in a new position with different problems than those which exist where she is now employed. If she has made him a good superintendent he should be interested in her having a better position with more pay. And, unless he is the smallest man in the whole institution, he will ever strive to help employees in getting better positions.

There may be such small people in authoritative positions in hospitals but I trust to God that there are not many. And I am quite sure that those who fall in that class will soon fall out of responsible executive positions. I, for one, have a great deal of confidence in the broadmindedness, the fairness and justice of those who operate hospitals. I would like to see this very spirit of cooperation exist between all heads of all hospital departments so that if one hospital needs a superintendent another hospital will gladly recommend its assistant superintendent as soon as it finds out if, in the opinion of the executors, this individual is qualified to fill the position. Yea, even more than this, their very own superintendent if it means a promotion for her with increased salary.

This attitude between hospital administrators and operators would elevate, stimulate and promote each employee to give his or her very best at all times. Mr. Hospital Administrator, let me urge you when you need a new employee to consult first those who operate hospitals before you communicate with the employee directly.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Operative Injury of the Bile Ducts

Stricture of the common bile-duct from congenital atresia is marked by recurrent attacks of obstructive jaundice in early childhood. Stricture of the duct from chronic inflammation most often follows impaction of gallstones in the duct and is a disease of the middle-aged and of the elderly. Most strictures, however, are man-made and follow cholecystectomy. It is of interest to note that operative injury to the bile-ducts is more apt to occur in cases that are comparatively free from inflammation and induration. In them the structures are easier freed and the hepatic and the common bile-ducts are more apt to be pulled up into the forceps and ligated with the cystic duct in the removal of the gallbladder.

Adequate exposure of the ducts at the time of operation is the best protection against injury. In very short fat women, with small high livers, it may be impossible to see the ducts, especially if there is inflammatory induration of the tissues. A right paramedian incision from pubis to costal margin affords the best exposure but, except in cases of jaundice where the common duct has to be explored, we have in recent years preferred the transverse incision, because of the ease with which it is closed and of the freedom from pain and respiratory embarrassment after it, as compared to the right rectus incision.

Injury to the common bile-duct at operation is followed by interference with the normal flow of bile through the duct into the duodenum. If the abdomen has been drained and the proximal end of the duct has not been ligated the bile will escape externally and a biliary fistula will form. If the duct has been ligated, or if it has been cut in a few proximal end ligated, jaundice will begin in a few hours and progressively deepen. If the duct is

partially constricted by ligature jaundice may not begin for several weeks or months; *i.e.*, until contransaction from scarring has occurred.

The operative repair of traumatic injury to the bile-ducts severely taxes the mechanical ingenuity of the surgeon. Each case is an individual problem. A strictured duct may be opened longitudinally through the stricture and closed transversely. This enlarges the lumen at the point of stricture but shortens the duct. If the stricture is too long to be overcome in this way it may be excised and the ends of the duct sutured together.

When the common duct or the hepatic duct has been cut and the ends tied at a previous operation, the distended proximal end may be readily identified. Very rarely it may be anastomosed to the distal end which is collapsed and buried in adhesions. Biliary circulation can, in most cases, be best established by mobilization of the proximal duct and anastomosing it directly into the duodenum. If there has been destruction of too much of the duct to permit of this the gap should be bridged by a T-tube, one end of which is tied into the duct, the other into the intestine. Although reinforced by omentum the tube should be worn indefinitely, for experience proves that a tube-made bile duct, although ultimately epithelialized, contracts and becomes slowly obliterated after the tube is removed.

Finally, if there is a long-standing fibrous biliary fistula that has become epithelialized and that is of sufficient caliber to provide adequate drainage, the tract may be carefully dissected out and the distal end sutured into the duodenum.

It may be said in conclusion that, if a functioning gallbladder is available, physiological flow of bile into the intestine may readily be obtained by cholecystenterostomy. No matter by what method, operative repair of traumatic injury to the bile ducts is a tedious plastic precedure which, to be effective, must be accomplished without tension on the tissues involved.

OBSTETRICS

Ivan Marriott Procter, M.D., F.A.C.S., *Editor*

The Cervix in the Obstetrical Follow-up

The cervix, constructed for special function, offers great protection to the important organs above and without it obstetrical and gynecological morbidity and mortality would be greatly increased. Capable as it is of accepting and mastering many frank insults, it is the source of frequent disease, but the savior of many women. The vagina normally contains several varieties and large numbers of bacteria. It is frequently contaminated through instrumentation, manipulation, coitus, and due to the proximity of the rectum, so that the cervix is more or less constantly bathed in a solution of organisms.

The corporeal endometrium is smooth, contains many shallow glands, and is covered by ciliated, cuboidal epithelium, having a definite immunity to infection. The cervix, in contrast, is lined by a mucosa thrown into folds radiating from the median raphe and covered by ciliated columnar epithelium. At the internal os there is a transition from columnar to cuboidal, at the external os from columnar to squamous, epithelium. This latter covers the portio and vagina. Both of these transition points are important. The cervical mucosa differing from the corporeal contains many deep-seated racemose glands which physiologically secrete a clear alkaline mucus to plug the cervical canal and protect the uterine cavity and structures above. However, these glands seem to possess no immunity, and are highly susceptible to infection, which firmly and permanently establishes itself. Once implanted, bacteria not only produce irritation, stimulation, hyperplasia and congestion, but enter the lymphatics at their origin—small, hollow spaces (lacunae)—in the cervix, pass through the channels surrounding the bundles of uterine muscles, thence into the subperitoneal spaces where they collect in two main canals to follow the uterine and ovarian blood vessels. Normal lymphatic distribution greatly determines the extent of metastasis of what appears to be a local or innocent cervical infection. The same anatomical factor is operative in later years when the question of malignancy must be considered.

Cervical infection frequently produces chronic passive congestion of the uterus and quickly involves the parametrial tissues and uterosacral ligaments. The weight of a heavy uterus on these swollen supports results in pressure sensations and backache, both of which are aggravated by menstruation. Deep-seated pain during coitus is the result of pressure upon these inflamed tissues and the pain can be demonstrated by lifting the cervix. This common disease condition, the result of cervical infection, is frequently considered minor by the physician; but it is of major importance to the patient, holding as it often does, the key to comfort and happiness. Too frequently the physician considers the pelvis negative unless there is extensive laceration and erosion of the cervix, salpinx (hydro- or pyo-) or ovarian cyst; all of which may result from cervical infection.

The commonest pathological lesion of the cervix is the so-called erosion. The term is a misnomer,

suggesting as it does ulceration or solution in continuity of tissue. As a matter of fact, the surface frequently has an intact epithelial covering. This epithelial layer, however, is very thin at times and slight abrasion results in bleeding. The erosion takes origin when infection gains entrance through minute breaks in the epithelial wall as a result of menstrual contractions, injury at labor, or operative, or other quick and forcible, dilatation. The infection produces swelling of the subepithelial tissue, which raises the squamous epithelium and finally casts it off. The infection at the same time stimulates abundant growth of the endocervical mucosa, which grows out of the external os where it develops new glands on the portio. Finally there is an attempt on the part of Nature to heal or repair. This so-called healing is a makeshift and is misleading. The fiery red "erosion" disappears as a result of epithelization, but the infection persists in the deep-seated glands and is carried by lymphatics throughout the pelvis. Nature rarely, if ever, makes any repair other than superficial healing (squamous epithelial covering) which follows a reduction in virulence of the infection. Tamponade and the local application of caustics stimulate the same superficial epithelial growth without penetrating the deep-seated glands to drive out the infection that can not be reached with topical applications.

A study of the records of 500 post partum (six to eight weeks) patients, which is now being made shows that 243 have cervical infection as evidenced by so-called erosion. A much larger number, 85%, show at least a slight laceration of the cervix; but it is not the laceration of the cervix that produces the more serious or incapacitating pelvic complaints: it is the infection which may have entered without visible break in the continuity of the cervical tissue.

Management of Post Partum Pathology of the Cervix

First we must keep in mind that it is not the usual laceration that produces pathology and discomfort, but the infection that accompanies it. The infection in the majority of instances is characterized by so-called erosion, and is best treated by cauterization. The use of the cautery is not without danger: deaths have been reported following its use in two large American clinics and we have seen pelvic cellulitis and abscess develop. There should be no destruction of tissue by thick or overheated blades. Infection of the cervix and cautery wound from nasal and mouth contamination (spray) should be prevented by the use of the mask. Physicians with acute upper respiratory infections should be especially careful. Postpone cauterization in patients with fever. Employ treatment when the condition is quiescent, five days after completion of menstruation. For many years we have found the flat-tip, nasal cautery most satisfactory, making cuts 3 to 6 mm. deep in a crucial or radial manner. More extensive disease is treated according to the amount of infection and laceration, the duration of the disease, the age and parity of the patient. We divide the cases into four general groups:

Group I.—The ordinary superficial erosion or moderately deep infection seen post partum. This is treated by radial cauterization using a thin blade.

Group II.—Erosion superimposed on deep bilateral laceration treated by trachelorrhapy.

Group III.—Long-standing, deep-seated infection treated by Sturmdorf tracheloplasty.

Group IV. — Extensive disease, with multiple lacerations, erosion, eversion, hypertrophy and cystic degeneration is treated by amputation if frozen section is found negative for cancer. Such management not only removes the disease process, and relieves the patient, but, in our opinion, is the greatest prophylactic step in lowering the mortality from cancer of the uterus.

Failures in the Treatment of Urinary Tract Infections With Sulfanilamide

(E. G. Ballenger, *et al*, Atlanta, in *Jl. A.M.A.*, April 22nd)

We emphasize the importance of recognizing protected foci or dead spaces as chief causes of failure in the treatment of genitourinary infections and direct attention to the fact that a longer time, a higher degree of immunity or a greater concentration of therapeutic agents is required for the eradication of infection from such foci.

Although sulfanilamide is an efficicacious drug, it is not one to be used indiscriminately or over prolonged periods without an effort to reinforce its use with supplementary measures or without a search for protected foci in need of special local treatment.

Our experience has shown that hyperpyrexia is the most dependable agent with which to reinforce sulfanilamide in the treatment of resistant infections.

Silent Coronary Occlusions

(C. M. Cooper, San Francisco, in *Med. Times*, April)

Patients can develop the electrocardiographic changes that we associate with coronary occlusions as a result of sicknesses which seem to them to be of minor importance, and for which they stay in bed, at most, only a few days.

Some patients who for years have experienced constrictive chest pains, but who have presented normal or questionable electrocardiograms, develop characteristic electrocardiographic changes, without noticing any change in their symptoms and whilst they are up and around.

Some patients, between the check-ups for which they periodically come develop such electrocardiographic changes, without having experienced any sickness which has incommoded them and without having had any suggestive symptoms.

These changes evidently will be discovered only if electrocardiograms are routinely made as a part of the periodic examinations for which patients come.

It is essential that we live within the field of our cardiac response, both in work and in play.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Growing Pains

In the March 1939 issue of *The Journal of Pediatrics* an article by M. J. Shapiro, M.D., of Minneapolis, entitled, Differential Diagnosis of Non-rheumatic Growing Pains and Subacute Rheumatic Fever, attempts to solve this trying problem. Ever since Jacobi, the father of American Pediatrics said, "The large majority of attacks of growing pains means rheumatism," many of us have believed (not literally) it to be so. Yet ten years later the same authority stated,"In many instances growing pains are but the expression of muscular fatigue." It is not that Dr. Jacobi reversed himself but that most of us did not see his later statement or failed to remember it. Such is the history of quoting someone from the literature. His first statement was a new idea; it stuck, and his later qualifying statement received little attention.

Dr. Shapiro states that he agrees wih the report of Pollack in Abt's *Pediatrics*. "In growing children, especially girls from two to ten years of age and often about the age of puberty, weakness, stiffness and pains in the muscles are occassionally observed. Usually they occur at night or towards evening. When they come on during the night, the child is awakened by pains in the legs or thighs, so severe that they cause the child to cry out. After a time the pain subsides, and the child again falls asleep, frequently to be awakened again by pain in the same place or in another extremity. Finally the pain disappears and the next morning the child awakens and is as well as ever. These pains recur at about once a week or less frequently. They rarely affect the arms. The changes incident to growth in the upper epiphyses of the tibia and lower epiphyses of the femur have been suggested as an etiological factor."

Dr Shapiro's study has shown him that many such children go through childhood and never develop rheumatic fever or carditis. In addition to the following differential diagnostic chart, the author shows from study and observation the following interesting comparisons between the rheumatic and the non-rheumatic types of growing pains. The rheumatic child usually comes from the lower economic levels, while the reverse is true of the non-rheumatic type. Non-rheumatic growing pains appear in the well nourished child. The poorly nourished child most frequently becomes rheumatic. Growing pains are rarely complained of in the lower extremities while the rheumatic child has his pain in both upper and lower extremities. The child with simple growing pains is seldom absent from school because of the pain while the rheumatic growing pains freequently are so severe that the child can't walk up steps. Dr. Shapiro concludes his report with the statement, "This is nothing more than speculation as I have no facts to support this point of view. Whether or not normal growth is painful remains to be proven."

DIFFERENCES BETWEEN NONRHEUMATIC "GROWING PAINS" AND JOINT PAINS OF SUBACUTE RHEUMATIC FEVER

	Nonrheumatic "Growing Pains"	*Joint Pains of Subacute Rheumatic Fever*
Age at onset	Early childhood—often continues through adolescence	Most commonly between six and seven years of age—often occurs in attacks following upper respiratory infections or other infectious diseases.
Time of pain	At end of day—especially during night often awakening the child several times. Pain is gone in the morning and usually does not occur during the day.	On first getting out of bed in the morning—during entire day—especially on motion; often causing limp. Patient feels better on getting warm in bed.
Location of pain	Most commonly in muscles of legs and thighs—rarely in muscles of upper extremities. Occasionally involves knee joints	In the joints themselves of upper and lower extremities.
Other signs of rheumatic activity	Usually none	Repeated bouts of joint pains; nosebleeds, characteristic skin rash, pallor, fever, etc.
Objective signs in joints	None	Joints often have slight increased local heat and mild swelling usually overlooked by patient and parent.
Family history of rheumatic fever.	Uncommon	Common
Laboratory findings	Normal sedimentation rate Normal leucoyte count Normal hemoglobin	Increased sedimentation rate Mild increase in leucocyte count Moderately decreased hemoglobin

UROLOGY

For this issue THOS. R. HUFFINES, M.D., Asheville, N. C.

SILENT RENAL DESTRUCTION

EVERY physician has experienced a jolt when faced with the picture of complete, or almost complete, organ destruction, when an apparently normal patient presents himself complaining of some minor symptom, and after examination is completed, he must be told he has been carrying a calculus for years or possesses some lesion which has slowly and without symptoms, nullified the function of an organ. Disease of one of the paired organs as the lungs and kidneys, is especially apt to produce this situation, the well fellow carrying on the work of both, or the abundance of functioning tissue permitting of destruction of a great amount before symptoms are produced.

In this brief discussion I wish to present a case history which will illustrate and serve to prove the necessity of careful examination.

A married woman, 56 years of age, was referred to me because of the presence of many pus cells in a catheter specimen of urine. She had complained, for one week, of slight frequency and dysuria. She readily explained this as due to extra use of coffee a few days before frequency appeared. She had been given two bladder irrigations and a bladder sedative and her symptoms were practically gone Nevertheless, since pus remained in the urine, she was sent to me to determine, if possible, why cystoscopy revealed a practically normal bladder. There was little evidence of an existing cystitis. Both ureters were easily catheterized and the urine from the left kidney was essentially normal; the liquid from the right, obtainable only by suction and irrigation, was composed of very thick pus. Plain x-ray pictures showed a large shadow, not of the stag-horn type, which appeared to occupy the area of the right pelvis. Pyelogram proved this to be true. The stone tapered at the lower end and almost filled the lumen of the ureter at its pelvic junction. A catheter was left in the right ureter and frequent irrigations done. Over a week's time no function was ever evidenced. The total psp. elimination corresponded to the output of the left kidney. At operation the right kidney was found to have practically no cortex and was removed.

Blood counts, blood nitrogen and chloride content had been normal; no history of back pain whatever was elicited. This patient frequently took long automobile trips which caused no discomfort. There was no history of blood in the urine and she had not menstruated for 9 years. She had had moderate headaches, but these she had associated with a blood pressure of 170-S, known to have existed for 4 years. She does not remember whether or not the urine showed pus at that time; at least she was not told that there was anything abnormal with the urine. Her general health had been good.

While such cases are not of great frequency, nevertheless, the very possibility of their existence is sufficient reason for careful study. This is especially true in those cases in which pus cells, blood cells or albumin persist in a catheter specimen of urine although no grave general symptoms present themselves. I wish to emphasize the use of a catheter in obtaining specimens. Many times we find the presence of a trichomonas infection of the vagina or other types of vaginitis causing sontamination of the voided specimen—and of course—urethral and prostatic infections must be ruled out in men.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., Health Officer, Greenville, N. C., *Editor*

REPORT OF HEALTH MEETING

THE annual meeting of the N. C. Carolina Public Health Association was held in Greensboro May 1st and 2nd.

The principal subjects on the program were: The coordination of public health and related agencies, such as the medical, dental and nursing professions; the agricultural extension service; the welfare departments, and the public schools. Maternal and infant hygiene and birth control were also discussed.

One of the most important discussions centered around a unified school health program soon to be put into effect by the coöperation of the State Board of Health and the State Board of Public Instruction. It is hoped that the Board of Health will insist that it be a real health program and not a glorified physical education program. Not only does the program, to be effective, call for a medical man experienced in school health work as director, but psychiatric counsel should also be available if the problem child is to be dealt with intelligently.

Probably the most significant statement of the meeting, from the standpoint of organized medicine, was this, made by Dr. Carl V. Reynolds, State Health Officer, to which we say, Amen. Said Dr. Reynolds:

"We can not accomplish anything through continued agitation. We should be democratic enough to follow the vast majority in our profession and if we could only admit this point we should set about to submit a workable plan that would retain our individuality and give the patient the right to choose his medical and surgical advisors.

This can and must be accomplished. To regiment medical service is to destroy its efficiency."

A fatal case of Rocky Mountain spotted fever, in which a woman was apparently infected by picking a tick off her husband, is reported. The husband remained in good health. The source of infection in several cases has been traced to mashing ticks between the fingers after removing them from dogs.

HYPERTROPHIC ARTHRITIS is due primarily to wear and tear of daily use of articular cartilage—a tissue having little ability to repair itself.—*Bauer.*

HUMAN BEHAVIOR

James K. Hall, M.D., *Editor*, Richmond, Va.

Assimilating Philanthropizing

Emerson expressed the dictum that a gift is never a gift but always an exchange, and that the recipient gives as much as he receives and the donor receives the equivalent of his bestowal. But the press announced, a week or so ago, at the conclusion of the lengthy and well-publicised centennial program of Duke University the gift to that institution by Doctor Robert Sproul Carroll, of Asheville, North Carolina, of his private sanitarium. Acceptance of the gift was immediate, and it was followed by the statement that Highland Hospital, Dr. Carroll's private sanitarium, had been instantly leased by Duke University to Doctor Carroll for a five-year period, during which he will continue to operate the sanitarium.

Now that the psychiatric institution in the everlasting hills has been hallowed by its ingestion by the Great Beneficence in Durham may we not expect the digestion and the assimilation to work exceeding great wonders in the mental health of the Carolinians?

During the centennial program more than one of the verbal deliverances made reference to the backward state of civilization in the South. And in the report of the psychiatric survey made of North Carolina by the Duke Foundation and by other eleemosynary agencies a few years ago, the term lag was made frequent use of in descriptive reference to a number of conditions in that state. May we not surely expect all the ramifying problems presented by mental abnormality and subnormality to be grasped by firm hands in the new psysciatric set-up in the ancient hills of Buncombe?

Are there delimitations to the possibilities of philanthropic endeavor? Scarcely. There must have been those in another day who doubted that Daniel Drew could establish a Theological Seminary possessed of survival qualities; and many wondered, of course, if the attachment of the name of the old ferryman, who became a great Commodore, to the struggling school in Tennessee would quicken or would kill it; and there may be those still alive and mindful of other days to whom the association of the name of James Buchanan Duke with a School of Religion may seem incongruous. But, we are living in a new era. We have been mistaken in our biblical assumption that figs can never be harvested from thistles. I am prepared to believe, indeed, that any buccaneer sufficiently endowed with cash can actually come to be an accepted philanthropist if he have in his ears the whispered wisdom of the law, of ecclesiasticism and of latter-day sociology in guiding his pen as he formulates his holy indentures. Where sufficient money and intelligence co-exist anything can be carried through in the name of philanthrophy. Yet the methods made necessary in amassing the great fortunes from which the so-called philanthropies are chipped nullify the etymological significance of the word philanthropy.

I sometimes wonder if all our principal educational institutions may not be placed in two groups; those hampered by their poverty and those maculated by the sources of their wealth.

It would be a gracious thing for the transfer of the sanitarium in Asheville to the Great Philanthropy in Durham to be blessed by those groups in North Carolina so greatly concerned about medical practice and about human hygiene—the Medical Society of the State of North Carolina, the State Board of Medical Examiners, and the State Department of Public Welfare. North Carolinians never fail to express their gratitude to those who are forgetful of self in lending a hand to the weary and a crutch to the cripple. And may we not expect Doctor Carroll to be made the occupant of the Chair that has not yet existed in North Carolina—the Chair of Psychiatry— in Duke University—active or emeritus? Nothing but a paranoid attitude can justify us in being wary always of those who come carrying gifts.

On Good Friday

Here in Richmond, in a semi-basement room in the State Penitentiary, a Negro occupied for a fleeting moment the lethal electric chair. In Raleigh, North Carolina, two Negroes, one immediately after the other, went through the usual physical contortions in the lethal gas chamber in responding to the State's demand that an eye be yielded for an eye. In far-away ancient Illyria the invading Italian Army poured shot and shell from air, land and water upon the terrified inhabitants of that peaceful country. From her royal palace the young queen, bearing in her arms her two-day-old babe, fled to historic Thessalonica, followed soon by her royal husband. On the Sabbath Day following the Good Day choristers in many countries sang joyously: He is risen. What do the spirits of the slaughtered Albanians, and the souls of the three executed Negroes have to say about the Good Day?

Among the more common conditions to be thought of in the presence of a gastric crisis are first of all tabes, then pathologic lesions of the stomach and of the duodenum, abdominal migraine, angioneurotic edema, diseases of the gallbladder, of the pancreas and certain types of intoxication, such as lead poisoning.

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHIN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

Reprinted From
Journal of Southern Medicine & Surgery
1938-39
Charlotte

FAUST

(*To Wagner*)

Nur sitzt ihr immer, leimt zusammen
. . . . . .
In denen ihr der Menschheit Schnitzel kräuselt

You do but sit and paste together curled
Mere paper-shreds of thought from all the world.

IMHOTEP

(*Circa* 3000 B. C.)

Since man became man there has never been a time when religion and medicine did not exist in some form. The first cry of pain, a broken bone, bleeding or incapacity from any source called forth response of a kind from those nearby. Some in the group would by nature be more sympathetic than others, some would remember a similar experience of their own, others would react because they had a special knack for relieving suffering.

The life of early man was no bed of roses. On the contrary it was full of difficulties and he was always the prey of fear—fear of strange men and beasts, fear of lightning and thunder and other natural phenomena. All manifestations of Nature which he could not explain, he attributed to some supernatural power. And this supernatural power, or the knowledge that certain things were beyond his understanding, became the germ of primitive naturalistic religion. That superstition was the order of the day need hardly to be said.

As time went on, tribal organizations grew and the medical man became priest—so religion and medicine became inextricably mixed. These priests formed a special group and only the elect were allowed to join. The ceremonials of religion and of medical cures were largely one and the same. In both cases the effort was to get rid of the evil spirits, and largely this was through the effect of the mind upon the body of the patient. And thus we had the bizarre costumes, the shaking of rattles and the beating of drums, the shriekings and the howlings. This co-mingling of medical treatment and religious rites was the beginning of the long period of priest-physician which lasted to Hippocrates' time, 2500 years later. During all this time medicine and religion were one, and this class of priests-physicians supplied some of the greatest characters of history and made a multitude of great and lasting contributions to civilization.

The first priest-physician of whom we have a record was Imhotep. During the reign of Pharaoh Zoser, who ushered in the Third Dynasty of Ancient Egypt, about 3000 B.C., Imhotep was Zoser's chief adviser. Imhotep was the most influential man in Egypt at that time. James Henry Breasted, in his History of the Ancient Egyptians, gives this estimate of Imhotep:

"The success of Zoser's efforts was perhaps in part due to the counsel of the great wise man, Imhotep, who was one of his chief advisers. In priestly wisdom, in magic, in the formulation of wise proverbs, in medicine and architecture, this remarkable figure of Zoser's reign left so notable a reputation that his name was never forgotten, and two thousand five hundred years after his death he had become a god of medicine;. . . ."

It was during Zoser's reign that the first pyramid was built. Heretofore the buildings were made chiefly of sun brick and only occasionally boasted a stone floor or a small amount of stone as ornament. But Zoser, in an effort to surpass all his ancestors in planning the greatest and most magnificent of the royal tombs, used stone exclusively. He chose Imhotep as the architect and builder for his great program. Accordingly, Imhotep built the first or terraced pyramid, better known today as the step-pyramid, and from that time stone was used extensively for building purposes.

In addition, this versatile man held many civil and religious offices, but perhaps his greatest work was as physician. Temples of healing were built throughout Egypt in his honor; his name was held sacred and he became identified in the minds of Egyptians with Thoth, the god of healing. It must be remembered that Imhotep was an actual person. Later on Aesculapius held the same place in Greek medicine that Imhotep did in Egyptian medicine, but Aesculapius was only a mythological character, the son of the Greek god of healing, Apollo. Also Aesculapius

was represented to be the father of two daughters, Hygieia and Panacea. And likewise temples were built throughout the country in Aesculapius' honor and he became the Greek god of medicine, greater than his father. These temples were in the hands of religious organizations and the votaries were the priests—the priest-physicians. At the entrance of each of the temples was a statue of Aesculapius appearing as a bearded man holding a staff about which a snake was twined. Later this emblem was confused with the Caduceus, the wand of Mercury. Through this confusion, and possibly unwillingness on the part of the United States military authorities to follow the British in adopting the staff and serpent of Aesculapius, the Caduceus is the emblem of the Medical Corps of the United States Army and may be seen today on medical books and journals, on doctor's automobiles, pins etc. On either side of Aesculapius stood smaller statues of Hygieia and Panacea—names that are in common use by us in associations with the ideas of prevention and cure of disease.

Imhotep gave such an impetus to medicine that about 700 years later the science had become well organized. The celebrated Code of Hammurabi was introduced about 2250 B. C. This Code gives not only the ethics of the profession of that time but fixes the fees to be charged for various methods of treatment and operations and also the amount of damage a doctor was required to pay in case an operation was not successful. It is interesting to note that this Code makes a distinction between the fees that should be paid for the same services by different classes of patients. Some historians give the exact date of this Code as 2080 B.C. At any rate it gives a picture of the state of medicine of a period at least two thousand years before the birth of Christ.

A few striking paragraphs from this Code:

"If a physician operate on a man for a severe wound (or make a severe wound upon a man), with a bronze lancet, and save a man's life; or if he open an abscess (in the eye) of a man, with a bronze lancet, and save that man's eye, he shall receive ten shekels of silver (as his fee),"

"If he be a free man, he shall receive five shekels."

"If it be a man's slave, the owner of the slave shall give two shekels of silver to the physician."

"If a physician operate on a man for a severe wound, with a bronze lancet, and cause the man's death; or open an abscess (in the eye) of a man, with a bronze lancet, and destroy the man's eye, they shall cut off his hands."

"If a physician operate on a slave of a freeman for a severe wound, with a bronze lancet, and cause his death, he shall restore a slave of equal value."

"If he open an abscess (in his eye), with a bronze lancet, and destroy his eye, he shall pay silver to the extent of one half of his price."

"If a physician set a broken bone for a man, or cure his diseased bowels the patient shall give five shekels of silver to the physician."

"If he be a freeman, he shall give three shekels."

"If it be a man's slave, the owner of the slave shall give two shekels of silver to the physician."

"If a veterinary physician operate on an ox or ass for a severe wound and save its life, the owner of the ox or ass shall give the physician, as his fee, one sixth of a shekel of silver."

"If he operate on an ox or an ass for a severe wound, and cause its death, he shall give to the owner of the ox or ass one fourth its value."

Unfortunately, medicine did not maintain this high estate but went through a process of slow degeneration, reaching a point some five hundred years before Christ when it was customary to bring patients to the market place or wherever a crowd might gather or place them by the roadside in plain view, in the hope that some person who had been similarly affected or had seen others so affected, might give the sufferer some advice of value.

AVICENNA
(979-1037)

This Arabian physician was the greatest philosopher and theologian of his time. His versatility, his commanding grasp and his creative genius in the field of philosophy were sufficiently potent to warrant the characterization of his doctrines as Avicennism. Tradition has it that at the age of ten he was thoroughly acquainted with the Koran and the Arabian classics. While still very young he became proficient in philosophy, mathematics, astronomy and medicine.

In addition to his medical works he wrote extensively on such subjects as Physics, Mathematics and Metaphysics. Among more than the one hundred of his books are such titles as Book of Theorems and Warnings; A Guide to Wisdom; The Philosophy of Aroudi; The Philosophy of Ala. He has been spoken of as the "father of geology" because of his description of the origin of mountains. His philosophical studies became classical in the West and exerted a tremendous influence upon the western conception of theology and speculative philosophy. His interpretation of Aristotle and Plato places him among the great exponents of Greek philosophy.

The Dictionary of Philosophy and Psychology gives this concise statement: "Avicenna's philosophy consists mainly of Aristotelianism plus Neo-Platonism; but the mystic elements drawn from the latter are affected by Mazdaism. He is thus interested mainly in philosophy on its religious side, and his system is a doctrine of Being, based on Aristotle. God is the necessary Being; space, time, and the like, which receive necessity from God, are actual being; while the objects of the physical sciences are possible being. God is thus shot through all things, and the doctrine of emanation mediates between a crude creationism and an equally crude materialism. Hence Avicenna's doctrine of an 'active' intellect, common to all men, imparted to them, and destined to return again to God. In spite of this, Avicenna holds personal immortality. His doctrines had wide influence in medieval thought."

However, his eminence as a philosopher and theologian is surpassed by his fame as a physician. Early in his medical career he cured the Samani ruler of a serious illness and as a reward he was given access to the Royal Library, but he soon fell into disrepute and was banished. After a short while the ruler, Addoula, fell sick and Avicenna was brought back, and by 1024 he had become the physician and the literary and scientific adviser to the ruler and physician-in-chief of the Bagdad hospital.

His monumental treatise on medicine consisted of five volumes under the general title, Canon of Medicine. This was in reality a medical encyclopedia and included, with elaboration, the teachings of Hippocrates and Galen.

These volumes treated of physiology, pathology, hygiene, treatment, and even the preparations of remedies then used in medicine. It was a standard textbook in medicine until the 17th Century. He gave an accurate description of anthrax under the name of "Persian fire," described leprosy, gave emphasis to diet and wholesome living in the treatment of disease and wrote extensively concerning skin and nervous diseases. He was among the first to suggest the use of drugs on human beings as a method of testing the true value of the drugs in the treatment of disease. He advocated operation for empyema and the use of mechanical means in difficult labor—this was the forerunner of the obstetric forceps.

He was the greatest doctor from Galen (131-201 A.D.) to Vesalius (1514-1564) and dominated medicine for five centuries, from 1000 A.D. to the beginning of the Italian Renaissance.

However, for the great span of thirteen hundred years from Galen to Vesalius, very little real advancement was made in medicine. This period was so barren in medical progress that it is usually spoken of as the "Age of Coma" in medicine.

Like the great Galen, who dominated medical progress and thinking for centuries, Avicenna halted the advance of medicine because of his ability and eminence. That is, the medical men took what Galen and Avicenna wrote as the last word in medicine and they went to the books of these men for knowledge rather than to observation and experimentation on man himself. Surgeons claim that he blocked the progress of surgery by advocating the use of the cautery rather than the knife. It is true that Arab physicians lean strongly toward the use of the cautery. However, Avicenna must be credited with advocating at least one forward step in surgery, that is, the use of the ligature to control hemorrhage.

Celsus (25 B.C.-50 A.D.) seems to have been first to recommend the use of ligature to control hemorrhage and about a century later Galen writes of using silk or gut as ligature. But even the power of Avicenna could not establish this as a regular procedure in controlling hemorrhage from blood vessels. It remained for Ambroise Paré in the middle of the 16th century to reintroduce the use of ligature in the control of hemorrhage and to establish its value once and for all. At the same time Paré destroyed the age-old method of treating wounds with boiling oil. The abolition of the hot-oil treatment and the reintroduction of the ligature by Paré was the chief influence in the change from the Arabian preference of the cautery over the knife to the modern supremacy of the knife over the cautery.

In 1037, while Avicenna was accompanying the Arabian Army as military surgeon, he was seized with an acute attack of colic from which he died a few days later. We may well wonder if it were not appendicitis.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D. ..... Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP ..... Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. ..... Charlotte, N. C.

Urology

HAMILTON W. McKAY, M.D.
ROBERT W. McKAY, M.D. ..... Charlotte, N. C.

Internal Medicine

P. H. RINGER, M.D. ..... Asheville, N. C.

Surgery

GEO. H. BUNCH, M.D. ..... Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D. ..... Danville, Va.
IVAN M. PROCTER, M.D. ..... Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D. ..... Richmond, Va.

Pediatrics

G. W. KUTSCHER, JR., M.D. ..... Asheville, N. C.

General Practice

WINGATE M. JOHNSON, M.D. ..... Winston-Salem, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D. ..... Wake Forest, N. C.
R. P. MOREHEAD, B.S., M.A., M.D. ..... Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D. ..... Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D. ..... Greensboro, N. C.

Public Health

N. THOS. ENNETT, M.D. ..... Greenville, N. C.

Radiology

ALLEN BARKER, M.D.
WRIGHT CLARKSON, M.D. ..... Petersburg, Va.

Therapeutics

J. F. NASH, M.D. ..... Saint Pauls, N. C.

Tuberculosis

P. P. McCAIN, M.D. ..... Sanatorium, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

For a Definite Campaign Against Tuberculosis With the Family Doctor as the Central Figure

Pretty nearly everybody who speaks or writes on tuberculosis states that (1) in early diagnosis lies the main hope of further reducing the ravages of tuberculosis, (2) this early diagnosis is dependent largely on the family doctor; but most of these speakers and writers go on to say so much about the tuberculosis specialist and the necessity for sanitarium treatment as to keep patients from having any confidence in the family doctor's opinions about tuberculosis or his ability to do anything for a tuberculous person outside the walls of a sanitarium.

Dr. Donnelly's article in this issue is a strong presentation of the need for a basic change in presentation of the tuberculosis problem to the public. Manifestly, eight patients are not to be put in each tuberculosis sanitarium bed, a fact that has been repeatedly pointed out in the editorial columns of this journal; and many times have we expressed the opinion that, if tuberculosis specialists would only tell the public that most patients with tuberculosis can be treated satisfactorily in their homes by their own doctors, it would be much better for all concerned.

Those who have had no experience in general practice have difficulty in realizing how the ill- or little-considered opinion of an expert-specialist can hamstring a general practitioner. This may be illustrated by an experience of my own of some years ago, when the great hookworm campaign was on. I had been examining stools and prescribing thymol for several years, when the hookworm specialists set up 30 miles away for a stay of a week or two. To my astonishment my patients began to refuse to have stool examinations, because the "worm specialist treats 'em without that." To my complaint that this was a poor way to back up general practitioners who were trying to practice medicine rationally, the expert replied that so many came for treatment that there was no time for stool examinations; but the mischief was done.

As to the response, or lack of response, to surgical measures in tuberculosis, it would be a great disappointment to learn that these measures have not lowered the mortality; it seems pretty well established that they have contributed much to the comfort of the tuberculous.

The current issue of a journal[1] devoted especially to tuberculosis carries an article on tuberculin testing which expresses the opinion that this test is of diagnostic value in young adults, and of importance

1. *Diseases of the Chest*, May.

in showing that incidence of tuberculosis is slowly decreasing. It is worth noting that in Ontario the law requires that each hospital employee receive a tuberculin test within 30 days after entering hospital employ. If the reaction is negative, the test must be repeated once each year; if positive, an x-ray examination of the lumgs must be made within 30 days, and, for such employees who are less than 35 years of age, x-ray examination must be made at least once a year.

Another article in the same issue assumes that county health departments are "able in most instances to offer physicians home nursing service and public health supervision for their patients;" so it seems that home treatment is being encouraged by county health departments generally. This second author opposes the use of hospital beds for indefinite isolation of the incurable; he suggests that patients who have been successfully treated be utilized as teaching disciples, and offers the opinion that some patients already spend too much time reading about and discussing tuberculosis. Further he says that sanatoria should provide the patient's physician with periodic progress notes. Evidently this specialist (a public-health officer) is alive to the fact that the family doctor is still the patient's doctor, and that for best results he must be kept informed of developments, so that he can intelligently continue the management of the case after the patient is returned home.

We believe the time is ripe for a State-wide campaign along these lines in the State of North Carolina.

Attendance on the Tuberculosis Seminar to be held at Asheville the week (see p. 226) beginning July 10th, will constitute an appropriate feature of such a campaign.

President Allan

North Carolina, Dr. William Allan, of Charlotte,

With the conclusion of the meeting for this year of the Medical Society of the State of comes to the presidency. Certainly no man was ever raised to office with more nearly unanimous approval; and this despite the fact that Dr. Allan is in no sense a politician. Indeed, he has gone to the other extreme—instead of seeking offices he has always refused them when they were tendered, and firm and general insistence was required in this instance to overcome his aversion to all that savors of politics.

Dr. Allan is just recovered from an illness, and so was not able to attend the meeting. Let us hope he will not untertake to go about over the State to medical meetings in the fashion that has proved too much for the strength of some of his predecessors, who were more robust than he.

This journal offers the suggestion that his exceptional abilities can be made to serve the membership of this society without his attending a meeting of every county and district medical society that is to be held during his incumbency. It felicitates the society that its affairs are to be in the hands of a first-class doctor for the next twelve months.

Proper Care for Eyes

Tom Guthrie tells a tale that runs like this. He and his father were sitting on their porch enjoying the balminess following a very recent storm. Soon a young man came along and decided to investigate a broken wire that had fallen to the street. Both the sitters saw the curious one knocked out of his senses by the electric current with which the wire was charged. Then, from nowhere, a lawyer appeared and took charge of the situation. Tom remarked to his father: "It doesn't look exactly right for another lawyer to come and take a damage case right out of our front yard."

My secretary has just handed me this note, and that is what brought Tom's tale to mind.

"Dear Miss Wright:

Eye strain, with its symptoms of headache, pains and general eye discomfort, whether felt in or near the eyes or some distance away, calls for the service of your Optometrist for correction.

If your eyes are functioning properly they cannot give you any trouble. However, statistics show that seven out of ten have defective eyes that need correcting. This is an eye minded world, and today three out of ten persons are wearing glasses to correct eye defects.

If your eyes need attention, I would appreciate it if you will come in and consult Dr. ....., he is at your service, ready and willing to aid you in properly caring for your eyes.

Yours truly,

. . . . . , Secretary."

The letter has a number of points of interest, as we used to say of bones.

It being addressed to the secretary of a regular doctor is not very remarkable. I have had kindly letters from various persons who rejoice in the title, Doctor, offering to conduct a complete health study of my person, and gently pressing it in on my consciousness that I owed it to myself and to my dependents, to avail myself of this rare opportunity.

The "your Optometrist" is more of a novelty. The suggestion is that everybody who is anybody has an optometrist—your minister, your lawyer, your beautician, your car, your cook your Optometrist. And note the big O!

Pay attention to the "statistics," and, by doing a little sum in subtraction, see that not half as many persons are wearing glasses as should do so! Then the "I would appreciate"—from a person never

heard of before; and the "he is at your service, ready and willing" and the significant word, "properly"!

"Much ado about nothing?" Probably. That is, if you are not interested in the evidence that not more than 25 per cent of glasses worn in this country are fitted by oculists.

Obituary

Dr. Charles DeForest Lucas

Dr. Lucas died at his home in the Mint Hill section, Mecklenburg County, March 13th, 1939. The son of Mrs. Josephine M. DeForest Lucas and the late David K. Lucas he was born in Montgomery County, Virginia, February 23rd, 1899, where he spent his boyhood and youth. He received his early education at Christiansburg High School and was graduated from Milligan College in 1918 and later did post-graduate work at the University of Chicago. After graduation from the University of Virginia Medical School in 1926, he went to Boston, and studied pathology under Dr. Frank Mallory. Next in order was an internship at Roosevelt Hospital in New York City. Later he received a three-year fellowship at the Memorial Hospital in New York City, serving as assistant to Dr. Patrick Healey. Dr. Lucas located in Charlotte in 1934, organizing the Charlotte Tumor Clinic, of which he was director and confined his work to the treatment of neoplastic diseases. For the last two years he was unable to practice due to the fact that he had developed a malignant condition.

He was a member of the Mecklenburg Medical Society, North Carolina Medical Society, The Tri-State Medical Association, American Medical Association, American Roentgenray Society, the American Radium Society, and Diplomate of the American Board of Radiologists. In his specialty he was recognized as a leader having contributed many scientific papers to National medical publications.

He is survived by his wife, Mrs. Ruth Gaines Smith Lucas, his mother, three brothers, two sisters and five children.

Dr. Lucas' untimely death is a great loss to the community as well as to the medical profession.

—O. D. BAXTER.

After searching for 9 years for an agent that will give relief from pain, and carry no risk of addiction, a committee of scientists reports that discovery of such a drug lies in the future. Much of this work was done at the University of Virginia.

A good cook is halfe a Physitian.—*Thomas Cogan* (1545-1602).

NEWS

Buncombe County Medical Society

On April 17th. President Griffin called to order at the City Hall, at 8 p.m. 51 members present. Visitors were introduced from Johnson City, Black Mountain and Oteen.

Dr. Schäffle reporting on the progress of the Tuberculosis Seminar Committee, requested an expense fund of $50 which was granted after motion by Dr. Ward, seconded by Dr. White.

Dr. White, presented a paper entitled. Who Should Have a Baby?, dealing with indications for abortion and some contraindications to pregnancy. Discussed by Drs. Huffines, M. A. Griffin, C. H. Cocke, Briggs, Baier, Richardson W. R. Griffin and Kutscher.

The Cancer Committee, Dr. Moore reporting announced the speakers and programs for the Cancer Control Campaign being conducted in Asheville the weeks of April 17th and 24th, by the Women's Field Army.

The ninth meeting of the year May 1st.

Dr. John T. Saunders presented a case of Osteochondritis Desiccans in a young man of 19 years, demonstrated perfect result following operation on both knees.

Dr. G. Farrar Parker then presented the paper of the evening entitled. Practical Proctology, disc. by Drs. Justice and MacRae.

The secretary announced the conviction of a quack who had previously been located in Asheville.

President Griffin then announced that the second meeting in May would be held on the 22nd instead of the 15th of the month.

—G. W. KUTSCHER, JR., Secretary.

Mecklenburg County Medical Society

Regular meeting in the Medical Library on Tuesday, April 18th.

Papers:

Dr. O. L. Miller, Experience with Mental Fixation in Bone Surgery.

Dr. Paul Padget. John Hopkins: Diagnosis and Treatment of Cardiovascular Syphilis.

T. D. SPARROW, M.D., Secretary.

Mental Hygiene in North Carolina

A joint meeting of the Winston-Salem Mental Hygiene Society and the Winston-Salem Parent Teachers Association the evening of May first in the R. J. Reynolds Auditorium. Dr. Frederic M. Hanes gave a brief account of mental hygiene developments in North Carolina including the plan of Duke University to bring to the State a training center for psychiatricts, and Dr. Lawson Lowrey, of New York, delivered the address.

Ringer the Speaker at Dedication of Plaque to Dr. McBrayer

Dr. Paul H. Ringer, of Asheville, made the main dedicatory address at the unveiling of a plaque to the memory of the late Dr. L. B. McBrayer at the North Carolina Sanatorium on April 19th. The plaque was presented by the North Carolina Tuberculosis Association, whose board of directors met in the afternoon and reëlected Dr. P. A. Yoder president of the association for the next year.

Dr. William H. Smith, of Goldsboro, chairman of the memorial committee, presided. Dr. P. A. Yoder, president of the North Carolina Tuberculosis Association, introduced the speaker as one eminently fitted to express an appreciation of Dr. McBrayer.

The plaque placed in the lobby of the Main Building was unveiled by Jane Todd McCain, youngest grandchild of Dr. McBrayer and daughter of Dr. P. P. McCain, superintendent of the Sanatorium.

DR. RAYMOND THOMPSON ANNOUNCES FORMATION OF NEW CLINIC

A new clinic in Charlotte is announced by Dr. Raymond Thompson, for many years president and chief surgeon of the Crowell Clinic. Dr. Thompson has associated Dr. Walter E. Daniel and the two will limit their work to urology and urological surgery. Dr. Daniel, who will come to Charlotte June 1st, has been teaching urology at Duke. He won the Bachelor of Arts degree at Wake Forest in 1927 and the M.D. at the Medical College of Virginia in 1931. His post-graduate medical training consists of the following: Rotating interne, Johnston-Willis hospital, Richmond, Va., 1931-1932; interne in medicine, Duke hospital, 1932-1933; assistant resident in pathology, Duke hospital, 1933-1934; fellow in urology, Pennsylvania Hospital, Philadelphia, 1934-1935; assistant resident in urology, Duke Hospital 1935-1936; and resident in urology at Duke from 1936 to 1938.

To the memory of LIEUTENANT COLONEL JOHN JOSEPH CRAVEN, M.D., U.S.A., a tablet was unveiled at Fortress Monroe, by the United Daughters of the Confederacy, on May 2nd. This honor is for services rendered by Dr. Craven to Jefferson Davis, late president of the Confederate States of America, during his imprisonment at Fortress Monroe. Dr. Craven, acting as medical attendant to the prisoner of war, had his shackles removed and was influential in moving him from the damp prison to quarters in Carroll Hall.

The tablet was unveiled by Mr. Robert Craven, grandson of Dr. Craven, and Mr. Gerald B. Webb, Jr., great-grandson of Jefferson Davis.

ELIXIR

DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

DR. WILLIAM DEB. MACNIDER, Dean of the School of Medicine of the University of North Carolina, delivered at Rochester, Minnesota, on March 17, the Mayo Foundation Lecture. His thesis was: The Acquired Resistance of Fixed Tissue Cells as a Manifestation of Cellular Adaptation.

DR. C. L. OUTLAND, Medical Director of the Richmond Schools addressed the District of Coulmbia Health Agencies on School Health Service, at a meeting held in April. Dr. Outland is President-Elect of the American School Health Association.

DR. HUGH S. CUMMING, formerly Surgeon-General of the United States Public Health Service, is attending a number of health meetings abroad. In Paris he attends the meeting of the Permanent Health Office; in Geneva the Conference of the Health Com. of the League of Nations; and in England the International Medical Congress which meets on July 1st.

DR. ARTHUR S. BRINKLEY, of Richmond, gave an oyster roast to a number of his medical friends at his summer home, Sandy Point, on the Potomac River on April 15th.

DR. JAMES B. MURPHY, of the Staff of the Rockefeller Institute, lately visited friends in Richmond. Dr. Murphy is one of the six physicians appointed to constitute the National Cancer Council.

DR. THURMAN D. KITCHIN, President of Wake Forest College, will Address the Graduating Class of the Medical College of the State of South Carolina at the Commencement in June.

THE CROWELL CLINIC of UROLOGY and UROLOGICAL SURGERY announces the addition of Dr. Angus Morris McDonald to its staff June 1st. Dr. McDonald was graduated A.B. from University of North Carolina, in 1924, M.D. University of Pennsylvania 1928. He was interne-house surgeon Protestant Episcopal Hospital, Philadelphia, 1929-1930; Fellow in Surgery at Mayo Clinic, 1931-32; assistant resident and resident, J. Bentley Squier Urological Clinic, New York City, 1932-1935; clinical assistant in urology, Vanderbilt Clinic, Presbyterian Hospital, N.Y.C. 1932-34; assistant attending surgeon urology, Vanderbilt Clinic, N.Y.C. 1933-1934; and has been doing genito-urinary diseases and urological surgery, Greensboro, since 1935.

UNIVERSITY OF VIRGINIA

On March 14th, Dr. John Moyer Meredith addressed the Post-Graduate Clinic sponsored by the Patrick-Henry Medical Society, meeting at Martinsville, Virginia. His subject was Headache.

Dr. J. Edwin Wood spoke before the Raleigh County Medical Society, meeting at Beckley, West Virginia, on March 16th. He discussed Recent Studies in Experimental Hypertension and their Relation to the Treatment of Clinical Hypertension.

Dr. Fletcher Woodward presided at the scientific meetings for Nose and Throat of the American College of Surgeons in Baltimore on March 16th.

On March 24th, Dr. H. B. Mulholland delivered the third lecture in a Post-Graduate Course in Internal Medicine in Alexandria, under the auspices of the Division of Extension of the University of Virginia. He spoke on Acidosis, Alkalosis and Dehydration.

Dr. W. W. Waddell addressed the University of Virginia

Medical Society on March 27th on the subject The Effect of Vitamin K on the Prothrombin Time and Clotting Time in the Newborn, with Special Reference to Unnatural Bleeding in the Neonatal Period.

On April 4th, Dr. C. C. Speidel addressed the New York University Chapter of Sigma Xi on Living Tissues in Action. His talk was illustrated with motion pictures.

On March 31st, Dr. Staige D. Blackford delivered the fourth lecture in a Post-Graduate Course in Internal Medicine in Alexandria, under the auspices of the Division of Extension of the University of Virginia. His subject was Nutritional Diseases and Their Treatment.

Dr. David Russell Lyman, of Wallingford, Connecticut, addressed the University of Virginia Chapter of Alpha Omega Alpha on April 11th. He discussed Some Aspects of Medicine Not in *The Citadel*.

Dr. H. B. Mulholland addressed the Post-Graduate Clinic sponsored by the Patrick-Henry Medical Society meeting at Martinsville, on April 4th. His subject was Pneumonia.

On April 5th, Dr. L. T. Royster gave two addresses before the Gill Graduate Clinic in Roanoke. He spoke on The Diagnosis and Treatment of Laryngeal Dyphtheria and on Ear, Nose and Throat Infections as Related to Pediatrics.

Drs.. C. C. Speidel and J. E. Kindred attended the meeting of the American Association of Anatomists in Boston from April 6th to 8th. Dr. Speidel read a paper on The Adjustments of Cutaneous Nerve Endings During Growth, and Dr. Kindred read a paper on A Quantitative Study of the Histology of the Secondary Lymphoid Nodules of the Submaxilliary Lymphoid Nodes of Twenty-day Old Albino Rats.

On April 11th, Dr. Tiffany J. Williams addressed the Danville Academy of Medicine on the subject, Hypertension Subsequent to Toxemias of Pregnancy.

Dr. Henry H. Faxon, of Boston, visited our Medical School on April 12th.

Dr. Staige D. Blackford spoke before the Patrick-Henry Post-Graduate Clinic held in Martinsville on April 14th. His subject was Gallbladder Disease and Its Treatment.

Dr. Anderson Hilding, of Duluth, Minnesota, visited our Medical School on April 18th.

At the meeting of the University of Virginia Medical Society on April 24th, Dr. John M. Blackford, of Seattle, spoke on Peptic Ulcer.

The American Philosophical Society has awarded a grant of $400.00 to Dr. C. C. Speidel in aid of his cinephotomicrographic studies of living tissues.

Dr. George M. Lawson was elected President of the University of Virginia Medical Society for the coming year and Dr. Andrew D. Hart was elected Secretary.

On April 28th, Dr. H. B. Mulholland addressed a Post-Graduate Clinic in Lynchburg under the auspices of the Division of Extension of the University of Virginia. He spoke on Diseases of the Thyroid, Parathyroid and Suprarenal Glands. On May 3rd he spoke on Acidosis, Alkalosis and Dehydration; on May 19th on Carbohydrate Metabolism.

Drs. H. S. Hedges and F. D. Woodward attended the meeting of the Virginia Society of Otolaryngologists and Ophthalmologists on May 6th. Dr. Hedges presented a paper on The Treatment of Epithelioma at the Limbus of the Eye and Dr. Woodward showed motion pictures illustrating the surgical procedure of laryngectomy.

The Twenty-Third Post-Graduate Clinic under the direction of the University of Virginia Extension Division was held at the Medical School on May 5th. The program consisted of a symposium on Vitamins as follows: General Review of the Vitamins by Dr. H. B. Mulholland; Clinical Tests of Vitamin Deficiencies by Dr. H. D. Kruse of New York City; Vitamin K in Newlyborns by Dr. W. W. Waddell; Vitamin D by L. T. Royster; Human Vitamin Requirements and Therapeutic Dosages by Dr. W. H. Sebrell of the U. S. Public Health Service; and Pellagra by Dr. J. M. Ruffin of Duke University. Seventy-two physicians attended the Clinic.

The Annual Clinical Meeting of the Virginia Pediatric program was presented: Effect of Vitamin K Concentrate on Prothrombin Time and Clotting Time in the Newlyborn with Special Reference to Unnatural Bleeding in the Newlyborn by Dr. DuPont Guerry, III; Erythroblastic Anemia of Cooley with A Case Report by Dr. McLemore Birdsong; Pseudo-Hemophilia with A Case Report by Dr. L. T. Royster; and A Case of Aplastic Anemia with Recovery by Dr. A. S. Hurt.

Dr. D. C. Wilson attended the meetings of the American Psyciatric Association in Chicago from May 8th to 11th. He read a paper on The Results of Shock Therapy in the Treatment of Affective Disorders.

Duke

On March 24th and 25th, a Post-Graduate Clinic on the Management of Syphilis, under the sponsorship of the North Carolina State Board of Health and Duke University was held. The following speakers appeared on the program:—Dr. John H. Stokes, of the University of Pennsylvania School of Medicine; Dr. Harold N. Cole, of Western Reserve University School of Medicine; Dr. W. P. Richardson, District Health Officer, Chapel Hill, N. C.; Dr. Wm. deB. MacNider, of the University of North Carolina School of Medicine; Dr. Joseph Earle Moore, of The Johns Hopkins University School of Medicine; Dr. Paul O'Leary, of the Mayo Clinic; Dr. Roy Norton, of the University of North Carolina School of Public Health;

Dr. R. A. Vonderlehr, Assistant Surgeon General, Chief, Division of Venereal Diseases; Dr. Norman R. Ingraham, of the University of Pennsylvania School of Medicine; Dr. P. C. Jeans, of the University of Iowa School of Medicine, and Dr. E. R. Hardin, Health Officer, Lumberton, N. C.

On April 17th, Dr. E. Fullerton Cook, Chairman of the gave a lecture to the staff and students in the Hospital Amphitheatre on Blood and Plasma Transfusion.

On April 17th, Dr. E. Fullerton Cook, Chairman of the U. S. Pharmacopeia Revision Committee, lectured on The Physician and The Pharmacopeia.

Medical College of Virginia

Commencement Exercises closing the 101st session of the College will be held June 6th. It is expected that 160 will be graduated: '64 in medicine, 31 in dentistry, 25 in pharmacy, 31 in nursing and two with the Master of Science degree. Dr. Walter Edward Vest, Internist of Huntington, West Virginia, will be awarded the honorary degree of Doctor of Science. Dr. Otis W. Caldwell, General Secretary of the American Association for the Advancement of Science, will give the Commencement address. The annual sermon will be delivered in historic Monumental Church by The Reverend George Ossman, Rector, the evening of June 4th. During the day of June 6th alumni meetnigs will be held.

Dr. Morris P. Fishbein Editor of the *Journal of the American Medical Association*, addressed the student body of the college on April 21st, speaking on Quackery in Medicine.

The John and Mary R. Markle Foundation of New York recently made a grant of $3000.00 for studies in liver poisoning in the department of biochemistry. This project will be under the direction of Dr. J. C. Forbes, associate professor of biochemistry, who has done rather extended work in this field. The Dazian Foundation for Medical Research has also made a grant to the college of $700.00 for research in preventive medicine.

The college has received in gifts, grants, and bequests during the current fiscal year $2,023,204.00.

Dr. Harry Bear, Dean of the School of Dentistry, was elected President of the American Association of Dental Schools at its sixteenth annual meeting in Cleveland last month.

Mr. Wortley F. Rudd, Dean of the School of Pharmacy, was made President-elect of the Virginia Academy of Science at its annual meeting in Danville Virginia, May 4th-6th.

Dr. Lewis E. Jarrett, Director of the Hospital Division, attended the Southeastern Hospital Conference in Jacksonville, Florida, April 13th-15th. Doctor Jarrett gave a paper on Essential Points in Hospital Construction and Maintenance.

Dr. Frank L. Apperly, Professor of Pathology, attended the meeting of the Southwestern Virginia Medical Society at Bristol on April 13th. He spoke on the Pathological Physiology of the Kidney.

President Sanger attended the annual meeting of the Roanoke Alumni Chapter on March 29th, speaking on the present construction program of the college and its future outlook.

Contract for the general construction of the new hospital building has been awarded J. Slotoik Company, of Boston, in the amount of $929,500.00.

The John and Mary R. Markle Foundation of New York has made an appropriation of $3000.00 for studies of liver poisons in the department of biochemistry. This research project is under the direction of Dr. J. C. Forbes, Associate Professor of Biochemistry.

As a memorial to her son, Dr. Benjamin Hodges Frayser a loan fund for medical students in the amount of $2000.00 has been established here by Mrs. Annie R. F. Frayser, of Norfolk.

Dr. Morris Fishbein, Editor of the *Journal of the American Medical Association*, was the guest of the college on April 21st. Doctor Fishbein addressed the student body at noon, the program being held in the old First Baptist Church. This is the first time the property has been used since its acquisition by the college.

Dr. Harry Bear, Dean of the School of Dentistry, was elected president of the American Association of Dental Schools at its sixteenth annual meeting at Cleveland last month.

A tumor clinic has been established as a regular unit of the outpatient department of the college. The clinic is under the direction of a committee composed of Dr George Zur Williams, Associate Professor of Pathology as director; Dr. I. A. Bigger, Professor of Surgery; Dr. Frederick B. Mandeville, Professor of Radiology; Dr. Randolph H. Hoge, Assistant Professor of Surgery; Dr. Benjamin W. Rawles, Jr., Instructor in Surgery, with Dr. Lewis E. Jarrett, Director of Hospital Division, and Dr. Frank L. Apperly, Professor of Pathology, as ex-officio members of the committee. This clinic will enable indigent patients to obtain diagnostic and therapeutic treatment. For the present it is planned to hold the clinic three times a week. Dr. James Ewing, Director of the Memorial Hospital for the Treatment of Neoplastic and Allied Diseases, New York, met with the staff members at the meeting for organization and set up of the new clinic.

President W. T. Sanger attended the Duke Centennial celebration April 21st-22nd.

Dr. J. H. Brown has been elected president of the Rotary Club of Tarboro.

A S A C

ELIXIR ASPIRIN COMPOUND

Contains five grains of Aspirin, two and a half grains of Sodium Bromide and one half grain of Lime Hydrobromide to the teaspoonful in Syrup Elixir. ASAC is used for relief in Rheumatism, Neuralgia, Tonsillitis, Headache and minor pre- and post-operative cases, especially the removal of Tonsils.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1[illegible]*

CHARLOTTE, N. C.

Sole agents for the [illegible] in the U. S. on request.

Dr. Hawes Campbel, Jr., of Hanover, Virginia, is slowly recovering at the Johnston-Willis Hospital in Richmond from serious injuries sustained in an automobile accident.

Dr. John Minor Blackford, of Seattle Washington, has lately visited hs brother, Dr. Staige Blackford, at the family home at the University of Virginia.

Dr. Winifrid H. Sharrar, of England, has lately visited relatives in Greensboro.

MARRIED

Miss Zaida Pettit Thomas, daughter of Mr. and Mrs W. C. Thomas of Wytheville, to Dr. Marion Kemper Humphries, Jr., of the Hospital of the University of Virginia, April 15th.

Dr. Daniel O'Connell Sayres, Waterbury, Connecticut, and Miss Mary Adams, Mount Olive, North Carolina, were married on April 27th.

Dr. John Goodrich Smith, of Rocky Mount, and Miss Mary Lillian Wagner, of Warrenton, were married on April 25th.

DEATHS

Dr. Alfred Stengel died suddenly at his home in Philadelphia on April 10 at the age of 70. He had been for many years one of the dynamic factors in the life of the School of Medicine of the University of Pennsylvania. He was a careful diagnostician and a distinguished teacher.

Dr. Charles R. Stockard died on April 7th, at the age of 60. He was head of the department of anatomy of Cornell University Medical School and president of the Board of the Rockefeller Institute for Medical Research.

Dr. W. J. Meadows, Greensboro, N. C., died at the age of 67 on April 21st.

Dr. E. W. Phifer, 62, head of Grace Hospital, Morganton, died suddenly in the early hours of Sunday ,April 23rd. Dr. Phifer was educated at Bingham School, Davidson College, The North Carolina Medical College and Jefferson Medical College. As a mark of special esteem and respect, business was brought to a standstill in Morganton for time of the funeral, and public offices and schools were closed. Dr. E. W. Phifer, Jr., now taking post-graduate studies at Duke is a surviving son.

Doctor Richard Eugene Windley, of Vanceboro, N. C., died of coronary thrombosis on April 25th. Born Feb. 9th, 1878 at Lake Landing, North Carolina, a son of Dr. Samuel Windley, he studed at Trinity College before entering the Unversity of Maryland where he was graduated in the Class of 1903. He practiced at Swan Quarter until 1928, when he moved to Washington, N. C., to become Health Officer of Beaufort County. In 1934 he resigned as Health Officer, and moved to Vanceboro, where he practiced until the day of his death.

Diabetes will always have to be handled largely by the general practitioner.—*H. J. John.*

Ethyl Urethane.—2 to 4 Gm. per day, orally were given in each of 30 cases of bronchial asthma, with favorable results in 14.—Probstein *et al,* in *Jl. Lab. & Clin. Med.*

BOOKS

FAILURE OF THE CIRCULATION, by Tinsley Randolph Harrison, M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine. *The Williams and Wilkins Company,* Baltimore. 1939. $4.50.

This book is devoted to the study of why certain things happen in the circulation of the blood. Diminished blood volume, diminished blood pressure and diminished heart power are all recognized as having important parts. Forward failure and backward failure are differentiated and each given a section. The phenomena of congestive heart failure are discussed elaborately. Digitalis effects are gone into with great care and in great detail. The commonly held opinion that digitalis action is directly on heart muscle is brought into question. Most digitalis benefit is attributed to its reducing the size of the heart.

This is no run-of-the-mine work. It raises many questions, to some of which it offers answers. As it deals with conditions which are the means of exit of so many, and deals with these conditions understandingly, at times originally, the book is well deserving of careful study.

THE VAGINAL DIAPHRAGM, ITS FITTING AND USE IN CONTRACEPTIVE TECHNIQUE, by Le Mon Clark, M.D., Chicago, author of Sex Education and Emotional Adjustments in Marriage. Illustrated. *The C. V. Mosby Co.,* 3523 Pine Boulevard, St. Louis. $2.00.

It seems that, of all contraceptive measures, the vaginal diaphragm takes chief place. This booklet tells the why and the how. The illustrations amply supplement the text.

The greatest advance that could come in the field of gastrointestinal therapeutics today would come through the more widespread recognition of three facts: 1st, that in perhaps half the cases of severe indigestion general prostration, and abdominal pain, no organic disease is to be found in the abdomen and the causes of the trouble are constitutional inadequacy, psychopathy, nervousness, overwork, unhappiness, worry, fear, insomnia, fussiness, constipation, food sensitiveness, migraine, polyglandular disturbances, spondylitis, hypertension, menopausal storms, perhaps an impending divorce, or combination of several of these causes; 2nd, that almost all of these causes can be discovered only by the taking of a good history by a sympathetic and understanding physician who is not trying to see 20 new patients in the time that should be devoted to 5; and 3rd, that the present-day practice of making a diagnosis in a moment by glancing at a sheaf of reports from laboratory workers, roentgenologists and experts in the study of some one organ is bringing disaster to many patients and is responsible for the making of many tragic mistakes and the performance of many futile operations. —*Alvarez.*

The Woman Castrate may bleed vicariously from the nose, mouth or breast.—*Siegel.*

CHUCKLES

He: Will you ever forget that glorious week-end at Atlantic City?

She: Well, what am I offered?

She: "You remind me of the wild sea waves."

He: "Oh, because I am so reckless and unconcered?"

She: "No, because you are all wet and you make me sick."

"Who was the lady I seen you outwit last night?"

And as one girl put it, "Everything I want to do is either illegal, immoral or fattening."

Two spinsters were discussing men.

"Which would you desire most in your husband: brains, wealth or appearance?" asked one

"Appearance," snapped the other "and the sooner the better."

"How'd you get along with your wife in that fight the other night?"

"Aw, I had her crawling on her knees."

"Yea? what did she say?"

"Come out from under that bed, you coward!"

"I'm so sorry," said the sweet young thing mixed up in an accident. "it was all my fault."

"Not at all, madam," the driver of the truck responded with a gallant gesture. "I was to blame myself."

"But I insist the fault was mine. I was on your side of the street."

"That may be true," he said, "but, my dear madam, I saw you coming blocks away, and had ample opportunity to dart down a side street"

The president called his office manager in and thrust a letter under his nose.

"Look at that! I thought I told you to engage a new stenographer on the basis of her grammar."

The office manager looked startled. "Grammar? I thought you said glamour."

There are increasing reasons for believing that the sex of offspring may be determined, at least in rats, by the diet of the parents. Dr. Frederick Hoelzel, and his associates of the University of Chicago, feel justified in such a belief in consequence of their studies and experiments. Inasmuch as the soldier-husbands have during warfare a diet richer in protein than the diet of their wives, the protein constituent of the parental diet may be the factor in determining the sex of the offspring. Indications are that the sex of the offspring is more apt to be that of the parent that feeds upon a diet richer in protein.

Cattle in certain areas in Wyoming have been fatally poisoned by eating oats-hay. Sometimes cattle have died from grazing on the green oats. A water extract of oats-hay has been found to be fatal to cattle. Respiratory trouble ends in death. The blood plasma remains clear but the red cells show a high concentration of methemoglobin. Horses and sheep seem not to be susceptible to the toxin.

Concrete is being found to be as adequate a shield against penetrating x-rays as lead plate, if used in sufficient thickness, and to be much cheaper.

Emergency Treatment at the Scene of the Accident

(C. H. Folsom, Julesburg, Col., in *Rocky Mountain Med. Jl.*, April)

A rapid but thorough examination is essential to determine if the injury is trivial or serious. If shock be severe, morphine should be administered and the patient kept warm and quiet. Remember in head injuries opiates often cover up important symptoms. In compound fractures the limb should be straightened and immobilized and sterile dressings promptly applied to the wound. Tincture of merthiolate or a similar solution is of doubtful value. Severe hemorrhage may require the use of a tourniquet if a tight compress does not control. The tourniquet should be loosened in an hour and if needed longer should not be left on for more than 20 minutes at a time.

In major fractures "splint 'em where they lie." It is not necessary to remove the clothing. Undue traction should be avoided.

Fractures of the clavicle and undetermined injuries about the shoulder should be treated with 1) a pad in the axilla, 2) a band binding the elbow to the shoulder, 3) a band binding the arm to the chest, and 4) a sling to support the forearm and hand.

For severe fractures of the spine and pelvis, gentleness must be emphasized, and all these patients should be moved on a stretcher or an ambulance.

In cases of fracture of the skin careful shockless transportation is imperative. Heat loss from exposure and rough handling must be avoided. Stimulation may be necessary. There is no need for haste about an x-ray examination.

Items From Early Medicines and Quackery in Lancashire

(E. B. Leach, Manchester, in *Liverpool Med.-Chic. Jl.*)

The Reverend and Doctor James Scholefield baptised his Ancoats flock, treated them medically throughout life, and, at death, buried them in "safety tombs," so constructed that, if the body-snatchers tried to take them, a loud clanging was heard throughout the district

The frequency of my own name in Lancashire, a trade name as much as Butcher or Smith, shows that there were Leches or Doctors in the county at the time when surnames began to be used by the common folks, about 1400 A.D.

Increasing Tollrance for Sulfapyridine

H. F. Filippin, Phila., in *Diseases of the Chest*, May

Methods increasing tolerance for the drug and controlling nausea and vomiting:

1) Small doses of sodium bicarbonate after giving the drug.
2) Giving in water, fruit juices or milk.
3) Omission of one or two doses.
4) Use of barbiturates and chloral hydrate.
5) Sodium chloride and dextrose by vein.

You will all remember the old definition of an expert as an ordinary man away from home giving advice.—*President Conan*, of Harvard.

Incising auricular furuncles as a routine is now condemned.—*Hyman.*

All of 66% of all glycosurias are non-diabetic.—*H. J. John.*

Urinary Extravasation -Requires early diagnosis and early multiple, wide incisions.

GENERAL

Nalle Clinic Building

THE NALLE CLINIC 412 North Church Street, Charlotte

Telephone—3-2141 (*If no answer, call* 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
GYNECOLOGY & OBSTETRICS

EDWARD R. HIPP, M.D.
TRAUMATIC SURGERY

PRESTON NOWLIN, M.D.
PROCTOLOGY & UROLOGY

Consulting Staff

DOCTORS LAFFERTY & PHILLIPS
RADIOLOGY

HARVEY P. BARRET, M.D.
PATHOLOGY

General Medicine

LUCIUS G. GAGE, M.D.
DIAGNOSIS

LUTHER W. KELLY, M.D.
CARDIO-RESPIRATORY DISEASES

J. R. ADAMS, M.D
DISEASES OF INFANTS & CHILDREN

W. B. MAYER, M.D
DERMATOLOGY & SYPHILOLOGY

WADE CLINIC
Wade Building
Hot Springs National Park, Arkansas

H. KING WADE, M. D.	*Urology*
CHARLES S. MOSS, M.D.	*General Surgery*
J. O. BOYDSTONE, M.D.	*General Medicine*
JACK ELLIS, M.D.	*General Medicine*
FRANK M. ADAMS, M.D.	*General Medicine*
N. B. BURCH, M.D.	*Eye, Ear, Nose & Throat*
RAYMOND C. TURK, D.D.S.	*Dental Surgery*
A. W. SCHEER	*X-ray Technician*
ETTA WADE	*Clinical Pathology*
MARY ALICE PHILLIPS	*Clinical Pathology*
MARJORIE WADE	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building **Charlotte**

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building **Charlotte**

HERBERT F. MUNT. M.D.

FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS

Nissen Building Winston-Salem, N. C.

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., JUNE, 1939 No. 6

Constitutional Medicine*

RAYMOND S. CRISPELL, M.D., Durham, North Carolina
Duke Hospital

FROM the beginning of medicine it has been evident that the origins and the courses of diseases are not due to external factors alone; that there is some correlation between the physical makeup of a man and his disease tendencies, and further still between his physico-chemical make-up and his temperament and personality. This was taught by Hippocrates with his phthisicus habitus, apoplecticus habitus etc; continued by Galen with his melancholic, phlegmatic, sanguine and choleric temperaments; and elaborated by all succeeding medical men, reaching a climax in the early nineteenth century studies and interests in the related subjects of constitution and diatheses.

Physicians relied a great deal on this work in constitution and diatheses (on the internal or endogenous factors of disease) and, using these concepts, became quite skilled in diagnosis, prognosis, prevention and treatment; but all this work was overshadowed by the late nineteenth century developments in biochemistry, pathology, bacteriology and immunology. Interest and emphasis shifted from internal to external or exogenous factors and from the reactions of the body as a whole to that of the parts. There came about a new and our present era of medicine.

However, an incompleteness of this exogenous approach has been increasingly appreciated. Even in dealing with such infectious diseases as tuberculosis and poliomyelitis, it seems that in their causation there are internal, that is, constitutional, factors to be considered as well as the external agents. Hence, there has been a revival of interest in the work in constitution and disease tendencies (diatheses). The meeting of these two streams of medical investigation may mean a new era in medicine.

The approaches to the subject of constitution and the contributions have been multiple. Bound up in the subject are certain biologic principles, especially concerning heredity and both prenatal and postnatal developments. Fundamental contributions to these aspects of the subject have been made by H. Jennings and C. Stockard. Certain methods mainly anthropometric, have been used in common in researches in anthropology and in constitution. Stimulating and popular studies in physical anthropology have been published by Hooten. They are recommended to those who are interested in principles beyond and behind particulars.

The work in constitution by the Italian school has been largely neglected in America, except the specialized and unestablished work of Lombroso. The clinical investigations and publications of Pende should be better known. In his book, "Constitutional Inadequacies," Pende emphasizes the endogenic as opposed to the exogenic factors underlying diseases, especially as to their etiology, pathogenesis and therapy. Pende advocates an interest in both the endogenic and the exogenic approaches and factors in disease. While he does not attempt to define the term, constitution, with certainty and he keeps his conceptions of it elastic, Pende, like Rostan in 1822 and others, generally stresses the question of the imbalance of body systems—a principle that is of much help in understanding many disorders, especially many psychosomatic and psychoneurotic ones. No one who deals much with psychoneurotic patients can fail to note that physically so many of them are poorly put together and seem to function dysharmoniously; in other words, in so many of them the trouble seems constitutional.

If one is interested, one should read Pende to understand his belief that there are at least six conditions that enter into every form and function of any organ, tissue or cell and also his conceptions of six principle diatheses or disease tendencies to which human flesh is heir.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

Julius Bauer represents the greatest contributor in German to the study of constitution in its relation to clinical problems, especially those of internal medicine, while in America the two leading exponents of this approach have been George Draper and Lewellys F. Barker.

Current conceptions concerning constitution recognize in the first place that the constitution of a human being is individual to him, being partly conditioned by his heredity (genotypic constitution), partly by environmental influences from the time of fertilization onward (paratypic constitution). (The latter, it must be noted, therefore includes the important prenatal, intrauterine life of the individual). A second important concept follows, namely, that constitution includes the somatic and the psychic (the physical and the mental) make-up and tendencies of the person—things that are relatively permanent despite the fact that they are all the time undergoing some changes. A third concept has it that constitution becomes manifest in both morphological and functional characteristics (in form and function), especially in each person's external form, in his performance capacity, in his powers of resistance and in his mode of reaction to both physical and mental pathogenic influences. Constitution, or better, qualifying it, the phenotypic constitution as the clinician understands it, is thus not due to heredity alone nor to environment alone but to the interactions and fusing of both of these. In more biological and constitutional terms, the amalgamation of the genotypic constitution (inherited substances and qualities) and the paratypic constitution (individually and permanently acquired) results in something different, the phenotypic, the constitution of the person encountered. It follows from this that to argue as to which is the more important, heredity or environment, nature or nurture, is as pointless as to discuss which is the essential atom in water, the hydrogen atom or the oxygen atom.

Thus a person's constitution represents, at any given moment, his total situation in relation to his environment. This affects not only his daily reactions, physical and mental, but the course of any disease he might have, physical or mental. This is why in taking a medical history, and more especially a psychiatric history, great stress is laid for the understanding of the patient upon the acquisition of as complete information as can possibly be gained with regard to his heredity (genotypic constitution) and to his successive environments (paratypic constitution) with their interreaction in his present or phenotypic constitution. The information can, of course, never be complete, and great caution should always be exercised and critique used to the utmost before arriving at decisions concerning how much is, at the time of study of a person, dependent upon his constitution (heredity plus more or less permanently modified or acquired experiences) and how much upon the immediate externalities.

Stockard, especially in his experiments on the cross-breeding of dogs, has emphasized the important role of the endocrine glands in the development of the organism and the resulting phenotypic constitution. But Julius Bauer does not endorse the attitudes of Stockard and others who define constitution mainly in terms of the endocrine system. He says there is a wealth of material behind the endocrine glands, and the constitution derives its potentialities from the time the ovum is fertilized. The hormonal pattern and potentialities may be inherited and, therefore, of constitutional interest, or they may be adventitious or accidental with no great constitutional bearing.

Congenital and hereditary inadequacies and anomalies of the endocrine system occupy a very significant role in the determination of the somatic-psychic constitution. A vast mass of data has accumulated concerning the correlations of neuro-endocrinology and constitution, and between neuro-endocrinology and the constitution and psychological medicine.

However, it must be borne in mind that reference to constitution means reference to something quite fundamental and permanent. Therefore, the endocrine changes that are only incidental or apparent or recently acquired are not of such great concern to the work in constitution. These include most of the well-known and established and definite glandular or endocrine clinical syndromes.

Dr. George Draper, of New York, an internist, in his stimulating book, "Disease and the Man" is interested especially in the constitutional aspects of those diseases usually considered in the realm of internal medicine, such as gallbladder disease, peptic ulcer, rheumatism, arthritis etc. Draper defines the term, human constitution, as "that aggregate of hereditarial characters, influenced more or less by environment, which determines the individual's reaction, successful or unsuccessful, to the stress of environment." If one is interested he should read Draper in order to see his points of view and approaches. He considers that there are four panels that can be studied in estimating the constitution of a person: first, the morphological; second, the physiological; third, the immunological; and fourth, the psychological. "One panel bears no direct causal relationship to another, but each expresses in its special field the final result of the combined influences of heredity and environment." Draper's work has not been altogether established and confirmed, but it is very interesting and stimulating, especially to internists.

The work concerning constitution takes into consideration mental as well as physical reactions and tendencies and correlates them closely. Of all the investigations along these lines, those of Kretschmer have been primary and predominating. The work of this German psychiatrist published mainly in his book, "Physique and Character" (1925), has been enlightening and stimulating in correlating body-build (habitus or physique) and tendencies. Perhaps it has been of greatest interest to psychiatrists because Kretschmer's correlation has been mainly between body-build and temperament or personality and tendency toward mental disease. Kretschmer took careful measurements of thousands of cases of different mental diseases, and he thinks that there are two distinct tendencies toward body-build or habitus, standing in correlation with two distinct and different personality trends (unfortunately, he used the term, characters) and two major psychotic or mental disease tendencies. His work is confusing because of his shifting terminology, but he describes what he called at first an asthenic, later a leptosomatic, body-build (physique or habitus) which is liable to be associated with a schizothymic or schizoid (dementia praecox-like) personality make-up and a tendency toward—or a liability to—schizophrenia or dementia praecox.

The *asthenic* or *leptosomatic* type is characterized physically by being tall rather than short (exhibiting a deficiency in thickness or toward general hypoplasia). The face of such an individual tends to be long or oval, the neck long, the thorax long and usually flat, the shoulders narrow, the abdomen thin. The hair on the head is thick and spreading, but secondary sexual hair is not so well developed. There is a general tendency toward a light bony frame-work and toward undernutrition and low blood pressure. In the associated schizothymic temperament such traits as aloofness, introversion, egocentricity etc., are found (the "shut-in" personality make-up of Hoch and Kirby). These individuals are physically prone to have respiratory diseases, especially tuberculosis, and mentally to have the schizophrenic or dementia praecox diseases. Stating it another way, the majority of patients suffering from these diseases display the asthenic or leptosomatic body-build or habitus and the peculiar schizothymic temperament.

Another great group or type consists of individuals denoted *pyknic* by Kretschmer (sthenic as opposed to asthenic by a few). The pyknic type is characterized physically by shortness and thickness. The large skull is round, broad and deep and not very high. The face is broad and apt to be five-cornered, the neck short, the chest barrel-shaped, the costal angle broad, the abdomen protruding. There often is obesity especially of the trunk. The limbs are soft, rounded, tend to be relatively short and to show little bone or muscle relief. In the associated temperament or personality make-up, variously called cyclothymic, manic-depressive or syntonic are found the traits of extroversion, rich labile moods with a tendency toward easy elation and easy depression. Physically, besides the tendency toward obesity these individuals are liable to have diabetes mellitus, to develop high blood pressure and the various forms of rheumatism and vascular diseases. Mentally, if they develop a psychosis it is apt to be a manic-depressive one. About 85% of the cases clinically diagnosed as manic-depressive in Kretschmer's series possessed the pyknic habitus. The pyknic-manic-depressives show as much tendency to be hyperplastic as the leptosomatic-schizoids to be hypoplastic.

Kretschmer describes a third and what he calls the *athletic* body-build, characterized physically by a broad shoulder girdle as opposed to the narrow one of the leptosomatic and the rounded one of the pyknic, with prominent chin, extremities with well-developed musculature standing out in relief, thick bony frame-work, broad hands, firm abdomen with not much tendency toward obesity but with a comparatively narrow pelvic girdle. He maintains that this athletic type is associated mainly with a schizothymic temperament and a liability toward schizophrenia, but also to a cyclothymic temperament and manic-depressive psychoses or to a mixture of these.

A fourth or *dysplastic* type, according to Kretschmer, is generally determined by disorders of the glands of internal secretion and includes, therefore, especially persons of pathological endocrine make-up with the tendencies to physical and mental abnormalities that characterize these.

It must be remembered that even Kretschmer recognizes that few people are purely or definitely of these different typs, but that alloys or mixtures are more frequent. Kretschmer concludes that "physique and psychosis do not stand in a direct clinical relationship to one another. The physique is not a symptom of the psychosis, but, physique and psychosis, bodily and mental functioning and dysfunctioning are each, separately, part symptoms of the constitutional basis which lies at the bottom of the whole." This work has been verified by many observers and around it has developed a great amount of further work and literature, especially psychiatric.

Perhaps we have here an explanation for the observation that is frequently clinically made of some relationship between tuberculosis and dementia praecox. Some tuberculosis patients develop a schizoid reaction and quite a few dementia

praecox patients develop tuberculosis. In both of these conditions a certain constitution, a leptosomatic physique or body-build, is commonly found. Perhaps this physical and this mental disease represent different manifestations of the same constitutional disease tendencies. If we have this constitution plus the exogenous factor of the tubercle bacilli, we encounter tuberculosis; if we have this same constitution with accumulating pathogenic mental stresses, strains and experiences, we encounter schizophrenia (dementia praecox).

No doubt the skillful diagnostician, perhaps unconsciously and intuitively, uses these constitutional criteria in his work.

Attempts toward *constitutional grouping* or *typing* are along the lines of the age-old ones of attempting to classify or to type people as to physique, as to personality make-up, and as to disease tendencies. It must be admitted that we can not do so entirely satisfactorily; but if all the work along these lines is compared, it can be seen that at the two extremes there are two different kinds of people, the tall and thin (the linear of Stockard, the leptosomatic of Kretschmer etc.) tending to have a certain temperament or personality make-up (the schizothymic of Kretschmer, the introvertive of Jung etc.) and the bipolar group of the short and thick (the lateral and the pyknic) with associated distinctive and rather opposite temperaments (the cyclothymic, the extravertive). These antithical groups have their respective disease tendencies peculiar to their type, both as to physical and as to mental diseases.

It seems that personality traits are so inextricably associated with the physical constitution that it is somewhat academic to consider them apart. Quoting Lewellys F. Barker, "Despite the fact that every human constitution is individual and somewhat different from any other one in existence, it is also a fact that there are such close physical resemblances and such similar modes of functional responses among certain persons that there is justification for the attempts that have been made to recognize so-called constitutional types or constitutional groups to which a single person may be more or less quickly, if roughly, assigned in order to help medical men in their judgments regarding probable disposition to disease, probable resistance to disease, and probable forms of physical and emotional responses to influences from without. Such typing has been attempted sometimes upon the basis of physical configuration alone or sometimes upon the basis of clinical-pathological reaction tendencies alone. Recently, the advantages of considering both bodily traits and qualities of the personality (temperament or character, if you prefer) in the construction of constitutional types have been recognized the best classification perhaps thus far devised being that of Kretschmer . . . . ."

There is an advantage in knowing something about constitution, especially as to constitutional disposition to disease, both physical and mental. In the first place, the knowledge has absolute value in that it adds to our general store of scientific knowledge. In the second place, it is usable diagnostically. In psychiatry, for instance, a psychosis concerning which there is some doubt, occurring in a sthenic or pyknic individual is apt to be a manic-depressive one; in an asthetic or leptosomatic individual it is apt to be a schizophrenic one. Thirdly, a knowledge of constitution can be used in prognosis both as to the kind of disease a person might suffer if he broke down in a disease and also, to some extent, as to the course of any disease which might supervene.

The hereditary part of the constitution cannot be changed. (Unfortunately, so often strong hereditary components occur in many neurologic diseases, especially the heredodegenerations, that neurology has received a bad name therapeutically.) But the non-hereditary accretions of the constitution, presumed in the modern work, especially as to the paratypic, and the resulting final constitution, the phrenotypic, can be governed and modified.

For instance, since the disease tendencies (not only as to diathesis, but also as to immunology) are considered a part of the constitution of an individual, one might say that either an attack of typhoid or an artificial immunization against it changes a constitutional tendency toward having typhoid to a resistance against having it. Thus, the constitution of the individual, or at least a small part of it, has been changed.

The constitution of an individual may be compared to the foundation and frame-work of a house. These can be changed to some extent, and if they are and if a part of the structure besides this frame-work and foundation is changed, it looks like a different structure but essentially it is the same. In the work on constitution the potentialities and the tendencies of the constitution are emphasized, and these can be modified and changed.

With the old conception of constitution as being entirely inherited and unalterable, to label a condition constitutional or to deal with such therapeutically would be a melancholy and hopeless situation indeed.

But with the newer concepts that although relatively stable and permanent, constitution can be changed and constitutional catastrophes can be forestalled, one can begin to speak of prophylaxis and treatment of constitutional conditions. As is the case so frequently elsewhere, prevention or prophylaxis against constitutional disease tendencies

is easier and better than treatment.

There have been great triumphs in community or environmental hygiene and some in a limited way in personal physical hygiene. The work in constitutional medicine paves the way for constitutional hygiene. Since many psychiatric diseases are constitutional and since constitution takes into consideration mental as well as physical reactions, a great part of mental hygiene is involved in this constitutional hygiene.

To illustrate an application of constitutional hygiene in physical diseases, a person may have a constitutional tendency toward tuberculosis but theoretically and practically this may be warded off by avoiding contacts with tubercle bacilli and by building up the constitution, especially the resistances, of the individual. A person may have a constitutional tendency toward vascular or cardiovascular disease, nevertheless, disease or death from these causes can be forestalled by a proper regimen—limitation of activities, proper diet etc.

Just so, constitutional tendencies toward the important constitutional psychoses in psychiatry, the schizophrenias and the manic-depressive psychoses, for instance, can theoretically and perhaps practically be overcome although the pathogenic agents to be avoided may not be such physical ones as tubercle bacilli and unhealthy diets but such psychic ones as unhealthy mental habits, attitudes, stressful experiences etc.

Pende has pointed out that the constitution is amenable to stimulative training and reëducation, to conservation by learning functional economy and avoiding premature wearing out. Furthermore, to a certain extent, constitutional anomalies, especially of the endocrine system can be corrected or treated by organo- or endocrine therapy.

Since the hereditary and the prenatal aspects of constitution have been so briefly mentioned in this paper, the implications of the work in constitution, both as to genetics and as to prenatal care, cannot be considered. This is another, a long and a complicated matter.

Although the terms, constitution and constitutional, have been used extensively in reference to things medical, perhaps the first association even to a medical group would be to something governmental. There should be no such confusion although it is realized that after this short exposition there may remain some confusion as to just what is meant by constitutional medicine. The work in constitution may be new and unfamiliar to some medical people, and many more have taken the terms, constitution and constitutional, for granted when they have encountered them without stopping to consider the meaning. A few of the high spots in the work in constitution have been sketched. Time limits a discussion of any details or of anything concerning the direction of future research or promise in clarifying constitutional concepts.

It is hoped that now the term, constitutional, will have some meaning and significance, especially when applied to such important diseases of internal medicine as rheumatism, arthritis, thyroid disease, diabetes, hypertension, arteriosclerosis etc., and to such important neuropsychiatric diseases as the psychoneuroses, the schizophrenias and the manic-depressive psychoses. Emphasizing the "reactions of the whole," psychiatry can be looked upon as a part of "constitutional medicine," although we are not attempting to add another specialty to our present overspecialization. Rather we are trying to eliminate one, to combine internal medicine and psychiatry.

Constitution does not refer to the immediate environment and situations of the individual nor to his constituents and immediate accidents, such as infections, intoxications, traumas etc., nor to the unassimilated mental experences, although these are extremely important in the evaluation of many medical and psychiatric cases, and in some cases these accidental or situational factors would be paramount.

It is mainly in the numerous cases that do not have a specific, unitary etiology or immediate cause in the environment that a knowledge of constitution is helpful, and also for the indefinite cases in which many medical men rapidly lose interest, especially those cases that do not clearly arise from some understandable origin in biochemistry, pathology or bacteriology. A lack of a specific cause, an indefiniteness and the danger of a loss of interest are particularly apt to come about if there is a large mental component to a case. But a little consideration will show that many more cases come to the consideration of the medical man which are constitutional than those which are specific.

Incidentally, an application of the knowledge of constitution vitalizes and gives great interest to the routine performance of physical examinations when otherwise they might be humdrum and dull.

The neuropsychiatrist emphasizes total, as opposed to part, functioning, mental as well as physical functioning. He would be pleased if he could inveigle other medical men to do so, and the work in constitution drawing attention to the whole and its reactions—might be helpful in doing so. It might be an easy transition for the medical man since there are so many physical or organic connotations in constitutional concepts.

Unless thyroid disease, diabetes, peptic ulcer, arthritis etc., are recognized, viewed and treated as constitutional disorders, one makes little progres in successfully treating them.

Unless the so-called mental as well as the so-called physical reactions of the patient are taken into consideration and recognized and treated as constitutional, the patient is not apt to be successfully handled.

Just as reprehensible as the general medical man who neglects the constitutional is the psychiatrist who does so. And there are many psychiatrists who concentrate upon the environment, upon the situation, upon what we may call the non-constitutional experiences of the patient, to the neglect of the organic and the constitutional. Such psychiatrists use almost exclusively psychic, rather than constitutional, concepts.

But general medicine and neuropsychiatry can meet and can greatly overlap in the field of constitutional medicine. A realization of this would help to destroy the consideration of neuropsychiatry as something strange, apart and peculiar, a consideration that is, unfortunately, all too prevalent in medical circles.

Perhaps after this short and inadequate exposition there will be an increased interest in, if not an increased meaning to, the psychiatric insistencies that all symptoms should be viewed in relation to the total constitution and personality of the patient; that the whole patient, not just a part of him, should be treated; and that the patient is to be treated as well as the disease.

If interest has been aroused, or if more meaning as to what is meant by constitutional medicine is desired, it is suggested that the ten references mentioned in this paper and appended to it be consulted and read. Although the ten books mentioned represent divergent approaches to the problems of constitution, they include the most significant and stimulating contributions to the subject.

Bibliography

1. Jennings, H. S.: The Biological Basis of Human Nature (1928)
2. Stockard, C. R.: The Physical Basis of Personality
3. Hooten, E. A.: Apes, Men and Morons (1937)
4. Idem: Crime and the Man (1939)
5. Pende, N.: Constitutional Inadequacies (1928)
6. Bauer, J.: Konstitutionelle Disposition zu inneren Krankheiten (1921)
7. Draper G.: Disease and the Man
8. Kretschmer, E.: Physique and Character (1926)

Compendiums of the approaches and works on constitution especially in relation to neuropsychiatry can be found in:

9. Volume XIV of the Proceedings of the Association for Research in Mental and Nervous Diseases, entitled The Biology of the Individual (containing an article on Constitution and Internal Medcine by Lewellys F. Barker). and also in:
10. Hinsie, L. E.: A syllabus of Psychiatry (1933)

Discussion

Dr. O. B. Darden, Richmond:

It is rather disconcerting to be called upon without warning to discuss a paper such as Dr. Crispell has presented. I feel unworthy to discuss it. I believe we are prone to look at the patient only in part without any consideration of the correlation between physical make-up and the mental potentialities. The tendency to certain somatic diseases in individuals with a particular physical stature has long been a problem of serious study and thought. While, as Dr. Crispell points out, these studies have not led to dogmatic conclusions, there are many data to cause us to feel that there might be a definite trend in this direction. And this information might help us in our diagnostic and treatment problems if we were not handicapped by ignorance. Likewise an application of this same principle might be as helpful in the study of mental disorders.

We do know we come into the world equipped with certain tendencies. That these tendencies can be influenced by environmental factors is a well established fact. This is not only true of mental attributes but of physical as well. A better understanding of this subject will put us in a position to evaluate better just what influences should be emphasized to bring about beneficent changes in these constitutional attributes, and what should be avoided if possible. This presentation impresses us with the fact that we should be interested in the totality of the individual. I hope Dr. Crispell's paper will receive wide consideration. I thank him for the privilege of hearing it.

Dr. Joseph R. Blaylock, Marion, Va.:

It has been quite a privilege to hear Dr. Crispell. He has in a few minutes presented in a comprehensive manner the fundamental points in this important field. Constitutional factors have been stressed by the Italian workers, notably Pende and De Giovanni. The work of Pende is translated into English, termed Constitutional Inadequacies and is both instructive and readable. In this country Draper and Lewis have contributed greatly. Lewis, as pathologist, autopsied several hundred cases of dementia praecox. He noted the increased calibre of the larger blood vessels, and increased width of the aorta in the paranoid types as well as other hyperplastic changes, while in the hebephrenic type the calibre of the vessels was smaller, they weighed less and changes were hypoplastic.

Freud emphasized the importance of constitution in his earlier writings, a fact that has been overlooked. I feel that there is a determinism based on constitutional factors in psychiatric patients which determines the type of reaction pattern that will develop under stress. A person who has recovered from a manic or depressive reaction will probably develop the same and not a different type of picture if he becomes mentally ill again.

Even in the psychoneurosis reaction one individual will develop hysteria, another an obsessional neurosis, both having been precipitated by the same general group of factors.

In planning psychiatric treatment we attempt to define the assets and liabilities, that is, the constitutional make-up. We attempt to capitalize on and work with the assets.

Dr. Crispell, closing:

I knew the psychiatrists present would come to my rescue! I am hoping that you will get more out of the reading of the paper later than the hearing of it. I want to compliment Dr. Northington on putting so many papers on mental diseases in the Journal. Also I say don't leave psychiatry out in the cold. A great deal of your practice is psychiatry if you just recognize it. Again I want to compliment Dr. Northington for always having something psychiatric on these programs.

Until the seventh century, when Paul Egineta, a Greek physician, acclaimed himself the first male midwife, this work was done exclusively by midwives.

Fifty Years of Medicine*

Wm. H. Cobb, M.D., Goldsboro, North Carolina

The graduation exercises of the class of 1889 of Jefferson Medical College were held April 3rd in the Academy of Music, South Broad Street, Philadelphia. The members of the class, two hundred and twelve in number, were seated upon the stage, and, if I remember correctly, that was the largest class ever to graduate from ths old and honored institution. Dr. S. Weir Mitchell presented the diplomas with an appropriate address. Dr. Mitchell will be remembered as a neurologist, psychiatrist and voluminous writer. Among his books not associated with his professional writings was the famous historical novel, *Hugh Wynn, Free Quaker*. Of this class of 1889 there are living today forty-nine physicians whose addresses are known. Three of these—Dr. J. F. Highsmith, Dr. Wm. G. Sutton and myself—are in North Carolina.

IT IS A GREAT privilege to have lived and engaged in the practice of Medicine these past fifty years, fraught as they have been with the greatest achievements in Medicine, Surgery, Therapeutics, Chemistry, Biochemistry and Physics; all manner of transportation—aerial, surface, subsurface, sea and submarine; the Arts, the Sciences, radio, wireless, x-rays—so many instrumentalities for the healing of the ills of mankind and for the comfort of the human race: but this picture is darkened by the constant development of all manner of agents and agencies for use in the destruction of human life, the deification of blood and iron and might.

I studied Medicine under my father, the late Dr. W. H. H. Cobb, who was my preceptor. I visited patients with him, watched his examinations, took mental note of his bedside manner, assisted him in the preparation of his medicines, aided him in his surgical work, kept his books, assisted in the collections of his accounts, and worked in a drug store. Perhaps to a modern medical student this premedical course may appear odd and unusual, but I make bold to state that such a course has much to commend it, even today. Familiarity with disease and accidents, methods of diagnosis, the meeting of emergencies, system of treatment, a close association with this Doctor of the Old School, and emulation of his dignity, his kindness, his courtesy and his consideration would indeed be fine training for our young doctors, turned out of medical schools as they are today with but a reference to medical ethics, and with little preparation for practicing the Art of Medicine. They have been denied much.

Until I had read the *Doctor's Odyssey* by Heiser and *The Horse & Buggy Doctor* by Hertzler, I thought in a practice of fifty years I had boxed the compass of medical experience, but I seem to have been something of a piker in comparison with these men and their achievements.

Following my graduation April 3rd, 1889, from Jefferson, having attended classes in the Medical Department of the University of Maryland, I took the State Board Medical Examination in Elizabeth City and began the practice of medicine in Goldsboro, which at that time had a population of 4,000. It was bounded on the North by the Atlantic and N. C. Railroad, on the East by Slocumb, on the South by Elm, and on the West by George Street. In addition there were Webbtown, Little Washington and a few houses North of the Atlantic and N. C. Railroad. There were no paved streets, nor paved sidewalks, no water works nor sewerage system, but open wells, pumps, surface closets; and no telephones nor electric lights, the town being illuminated by gas lamps, one at each corner. These lamps were serviced by a man who rode in a sulky and carried a little ladder which he placed against the lamp post, the base resting on his sulky. He would mount, strike a match and turn on the gas jets, and then on to the next corner. The stores were all lighted with kerosene lamps. Horses, cows, chickens, geese and sometimes pigs were allowed in the city limits and at times wandered unmolested in the streets. Our ice supply came from the Kennebeck and Penobscot Rivers in Maine—shipped by boat to New Bern, transferred to box cars, and brought by rail. All the railroads ran through Center Street. The cars loaded with ice were placed on East Center Street, a skid was erected, the ice skidded through the alley beside Isaac's store to a warehouse in the rear, where, packed in sawdust, it was kept for use. We would carry our dime or larger amount of money, the proprietor would open a thick door, withdraw a block of ice and saw off the amount desired, tie a string around it, and you paid the money and went on your way rejoicing.

In 1890 I was elected Superintendent of Health of Wayne County. My duties were to attend the inmates of the County Home, six miles in the country, minister to the prisoners in jail who needed medical attention and make post mortems if and when required by the Coroner. For all these services I received $15.00 per month and out of this small sum was required to furnish the med-

* An Address to the Wayne County (N. C.) Medical Society Goldsboro, April 4th, 1939, at a Complimentary Dinner honoring Drs. Wm. H. Cobb, Wm. G. Sutton and W. B. Crawford, in recognition of Fifty Years in the Practice of Medicine by these physicians.

icine needed by these people, many of them feeble, infirm and semi-invalids. That I survived with my B.V.D.'s is still a mystery even to me.

In 1891, I was elected to the Staff of the State Hospital for the Insane at Raleigh, where I remained for 3½ years, resigning to return to Goldsboro to resume the general practice of medicine in association with my father, which partnership, most helpful and congenial, continued until the time of his death in July, 1909. The practice, experience and contacts in this hospital, the many types of mental and physical disease, gave me a wide field in which to develop my abilities; but only once while there did I perform an autopsy, and that case near ending in tragedy. I was reported to the Board of Directors, censured by the Superintendent, but came through unscarred and without court martial or demotion, after explaining that my desire for knowledge to help these unfortunates prompted my actions.

The prevailing diseases in our community were intermittent fever, remittent or bilious fever, as it was then called; congestive chill or malignant malaria and hemorrhagic malarial fever, referred to by the laity as "yellow chills." Typhoid fever began in May and lasted during the remainder of the year. I have seen five cases in one family at the same time, in the country—and now I do not see one case a year. Colitis, or dysentery as it was then called, occurred almost annually as more or less of an epidemic character, usually in April, due no doubt to the prevalence of flies. The pneumonias were broncho-, lobular and lobar. We did not have the influenza types so common today. An epidemic of la grippe, originating in Russia, spread over the entire civilized world in 1889 and 1890, and caused a great many deaths, especially in the aged and enfeebled and infirm.

We had another type of fever, called "typho-malarial", a misnomer perhaps, but it was of a continued type, not typical of either typhoid or malaria, ran two to four weeks and was not complicated by hemorrhages, nor cured by quinine. It may have been estivoautumnal malaria or paratyphoid A or B. We had no State Laboratory for making our blood tests, as we have today, and our diagnoses were not always either accurate or satisfactory.

Puerperal sepsis was with us and we were just beginning to adopt aseptic and antiseptic methods in obstetrics and surgery. The eruptive diseases of childhood were prevalent and infant mortality, due largely to our lack of knowledge of dietetics, was much greater than today.

Diphtheria and membranous croup were almost invariably fatal. We knew nothing of antitoxin or toxoid and a call to a case of either of the above diseases was too often an unexpressed invitation to a funeral. It is difficult today to realize the fear and panic that befell parents when a case of diphtheria was reported in the community. One family in Goldsboro lost by diphtheria six children in a brief space of time. Scarlet fever appeared at times in epidemic form and we had no serum to prevent or modify.

An epidemic of smallpox broke out in our little city and, at that time being City physician, I was called upon to stamp it out, and a general vaccination ensued. A pest house was built on the banks of Neuse River where the colored patients were segregated and treated, the whites being quarantined and treated at home.

Surgical injuries were largely due to railroad, cotton-gin and gunshot accidents. Operations were amputations of limbs, breasts and tumors, removal of bladder stones and enlarged prostates, and those incident to the minor accidents of life. Fractures were not so frequent as today, but broken arms from roller skating and falls, fractured thighs from falls or from horses running away, and fractured collar bones constituted our chief breaks. There being no x-ray machines to assist us, we relied upon a keen sense of sight, touch and hearing, manipulation and alignment. What we would have done with the innumerable types of fractures of today, in this highly mechanized age, with autos, trucks and busses, with no x-ray to assist us, can only be surmised.

The first operation for appendicitis in Wayne County, so far as I know, was done in 1889. I was not present, but I think the operation was largely exploratory; a ruptured appendix was found and general peritonitis closed the scene.

Chloroform was the anesthetic of choice in the South, while ether was used almost exclusively in the North.

There were only three specialists in the State in 1889, that I can recall, Drs. Lewis and Battle of Raleigh, and Dr. Graham of Charlotte—all eye, ear, nose and throat specialists. In addition there were several physicians in Asheville who devoted special attention to tuberculosis and diseases of the chest.

We had no hospital, no laboratory, no x-ray and nearly all surgery was done in the home. Difficult obstetrical work—versions, craniotomy, the induction of premature labor, high forceps operations—was all done in the home and usually with the aid of untrained assistants, for trained nurses were few indeed.

Our means of transportation and our manner of life possessed little of the comfort and ease of today. No good roads, I began with a road cart, a body with a back, fastened on springs, attached

to axle and shafts, with stirrups on the shafts; then an open buggy, a rubber-tired top buggy, and about 1909 the Model T, or some ancestor thereof. No self-starter, and the attempt to start "Lizzie" on a cold morning not only called for hot water on the carburetor, dextrous skill in your strong right arm, and the agility of a bull fighter to miss the rebound of the crank, but also patience, infinite patience and perseverance, and the wind of a radio announcer or a New Deal crooner.

Our monetary compensations were small, a day visit in town $1.00, night visit $2.00, obstetrical delivery $10.00. We were paid in money if it could be had, otherwise wood, meat, chickens, eggs, potatoes, fruit, a patched cotton quilt, and sometimes, good will and a ""God bless you."

A very difficult allnight obstetrical case, primipara, out of town, forceps delivery netted me 75c and an attack of peritonsillar abscess, due to my exposure in returning home fatigued and drenched with sweat; and illness of days in bed with the necessity of attention from a throat specialist from Raleigh, and much suffering. Another patient with a very severe and rather protracted case of lobar pneumonia attended by my father and myself, rewarded us with a peck of pears in appreciation of his recovery and of our ministrations.

Our first attempt at a hospital was the use of several upstairs rooms, the lower floor of which was occupied as a livery stable, corner of W. Center and Mulberry Streets. The next quarters for the hospital were in a brick building corner of John and Atlantic, the former use of the building having been that of a machine shop. From there the meager equipment was moved to the old Slocumb residence which then stood where is now located the home of George Dewey. Our present hospital on N. Herman Street with Nurses' Annex is a credit to our city and community and receives the approval of the American College of Surgeons.

My practice extended from the vicinity of Pikeville on the North, below Dudley on the South, East to the environs of Seven Springs and Best Station, West to Princeton, High Johnston, beyond Cox's Mill, Northeast to Hood Swamp, Sherrard's Crossroads, Yelverton Church, and old Nahunta, Patetown and Saulston Southwest to Grantham, Falling Creek and Thoroughfare. All this territory was covered with horses and buggies. In summer, heat and sand; in winter, cold and mud; in all seasons, fatigue; but we accepted it as a part of the day's work that had to be done, and "carried on." I attended a case of typhoid fever twelve miles away, with no telephone communication to keep me informed as to the patient's condition, and the patient recovered, I am happy to state.

In all country work, the physician was expected to furnish and prepare the medicine, usually at the bedside, and to meet this situation, I had a special medicine case built for me in Chicago, in which I could carry the standard medicines required for the usual diseases met in my practice. At times we had to write prescriptions and have them filled at the drug stores, which then were largely engaged in filling prescriptions, selling patent medicines and dispensing various and sundry farm and garden seed, also moth balls and canary bird seed; not a human filling station, as so largely obtains today, with kotex displays and soda water shieks the prominent objects to meet the eyes of a customer.

Marvelous have been the discoveries and advances in Medicine, Therapeutics, Surgery, Chemistry, Physics, Physiology, Anatomy, Aeronautics, Telephone, Television, Wireless, Radio, Submarine, Aerial, Surface and Subway transportation. Great have been the improvements in Hospitals and their equipment and conduct.

General anesthesia, spinal anesthesia, rectal anesthesia, local anestheisa—all these have been developed and perfected.

The brain, the chest, the heart, the lungs, the abdominal and pelvic organs, all are now treated surgically as well as medicinally.

Methods of diagnosis have been greatly improved and perfected, so much so that one of the trite sayings of Roberts Bartholow to his class in Materia Medica at Jefferson may now be relegated to the past. It was, "Gentlemen, when in doubt, give iodide of potassium,"—but there is still much of truth in another epigram that was a favorite of his; "Art is long, time is fleeting, judgment difficult."

May I mention a few of the great discoveries in Medicine, Chemistry, Biochemistry etc in the past 50 years:

1889—Behring used antitoxin for the first time in the treatment of diphtheria.
1892—Pfeiffer found the organism of influenza.
1893—Bacilli causing paratyphoid and paracolon infections were discovered.
1894—Kitasato and Yarsi isolated the bacillus causing bubonic plague.
1894—David Bruce found that sleeping sickness is spread by the bite of the tsetse fly.
1895—Röntgen discovered x-rays.
1897—Shiga found the dysentery bacillus.
1897—The discovery by Sir Ronald Ross that malarial fever was transmitted by the bite of the anopheles mosquito and not bad air, miasma or infested water.
1898—Bacillus causing foot-and-mouth disease

discovered by Löffler.

1898—Monsieur and Madame Curie discovered radium which has brought so much relief to those who suffer with cancer.

1898-9—Walter Reed and others demonstrated that typhoid fever may be transmitted by contact, by flies, by water and food pollution, by unclean hands, by polluted water or milk.

1900—Reed, Lazear, Agramonte and Carrol found that yellow fever was spread by the mosquito, *Stegomyia fasciata.*

1904—Todd and Dutton discovered the cause of relapsing fever, a spirillum conveyed to the human by the bite of lice and ticks.

1905—Bordet and Gengou discovered the whooping cough organism.

1905—Schaudin described the spirochete of syphilis.

1906—Wassermann introduced his famous syphilis test—modified by Noguchi in 1911.

1907—Sanborn & Nicolle proved that typhus fever is conveyed by the bite of a louse.

1909—Ehrlich gave us his famous intravenous arsenical treatment of syphilis, 606.

1911—Roux proved that sarcoma can be transmitted by a filterable virus.

1911—Bass cultivated the malaria plasmodium artificially.

1911—The first vitamin was discovered and subsequently important additional vitamins have been discovered and their application to improvement of health, nutrition and growth.

1915—Kendall discovered thyroxin, so successful in the treatment of disease resulting from inactivity of the thyroid gland with incomplete mental and physical development.

1922—Banting & Best gave us insulin and thereby made comfortable and prolonged the life of diabetics.

1923—Drs. Geo. F. & Gladys H. Dick discovered the cause of scarlet fever and made possible the control of this disease.

The vaccines or sera for the prevention and treatment of whooping cough and measles; the use of liver and gastric extracts for the treatment of pernicious anemia; the ductless glands and their therapeutic, physiological and pathological functions; all these and many, many more discoveries, the use of heat and the other unseen forces of nature might be enumerated ad infinitum.

Sulfanilamide and sulfapyridine and their compounds in treatment of streptococcus infection and certain types of pneumonia have brought hope of cure and greatly reduced mortality of these and other diseases of the human race.

And now as to socialized medicine, which the Senator from the State of New York would, with the consent and support of the present National administration foist upon us; I have nothing but condemnation. When politicians and bureaucrats dominate the practice of Medicine in America, may a merciful God help us. The destruction of initiative, the regimentation of medical men, the abolition of incentive for research work and study, the destruction of ambition and a desire for careers —all of these ills and many more may follow.

Why Hitlerize, socialize, communize America and its citizens? Let the Senator from New York regulate his German Bund before attempting to socialize American Medicine to his liking. Like the little boy when asked how he liked spinach, replied "To hell with it!"; so say I with regard to socialized State Medicine.

With a heritage of which we may be proud, let us not commercialize our profession, remembering that the poor we have with us always and that "the quality of mercy is not strained", but let us not forget that "the laborer is worthy of his hire" and "if any provide not for his own, he hath denied the faith, and is worse than an infidel". Every physician should try to make provision for the comfort, support and education of his family. When we are incapacitated either by accident, sickness or age, there is no pension for us. We are superannuated without compensation and our accounts, our library, and our office equipment and good will have but little if any value as assets, when we cease to function.

And now may I, in bringing this paper to a close, state that I am grateful and thankful for the privilege of having lived in this community all these years, except for 3½ years in Raleigh, in an humble way, engaged in the practice of Medicine as a family physician and a horse and buggy doctor? I have worked hard, in sunshine and in shower, have played little—too little I feel, as I look back. My life has been spent in the relief of sickness of body and mind of those who sought my services. I am deeply saddened by the thought and realization that my wife and children saw little of my company and were deprived of the association of husband and father to which they were justly entitled as we came along. And may I pay this tribute to the memory of my departed wife? She comforted, sustained and aided me in meeting my trying responsibilities in all vicissitudes and ordeals, and kept the home fires burning, sometimes to very ashes, while she in loneliness awaited my return. The broken social engagements, the self-denials and the disappointments were all sweetly and uncomplainingly borne by her.

I have no complaint to make. Life has been full.

I have had my moments of joy and elation and my hours of defeat. The joy of announcing the birth of one's first-born; the anxiety of ministering to those seriously ill or only infirm; the deep joy of watching the recovery of a mother, father or child whose life was in the balance; the sadness, pathos, and need for sympathy when death comes, for holding the tired hands and closing the eyelids in eternal sleep—all these experiences and emotions come to the family physician who is confidant, friend and counsellor, and at times also priest.

My children are about me and I can gather my grandchildren about my knees. It is a great happiness to meet daily people that I know and love. There is one family in this city that I have ministered to for five generations, and what a joy it is to see daily parents and children that I helped into the world.

Please God, I can still work, though not so strenuously as formerly; and when, in the eventide of life, I shall be gathered to my fathers, may I have a part with Abou Ben Adhem, who asked for himself: "Write me as one who loved his fellow man". When the last visit shall have been made, the last office appointment kept, the last prescription written; when at eventide the voices are low and the lights dim, may the comforting and assuring presence of the Great Physician be mine and may it be my portion to be—

"Like one that wraps the drapery of his couch
About him and lies down to pleasant dreams."

to be awakened on the other shore by loved ones gone before, with a bright, "Good-morning."

An Approach to the Diagnosis of Acute Abdominal Disease

(R. A. Barr, Nashville Tenn., in *Med. Times*, May)

While the specific location of a focus or its present or future seriousness can not be accurately determined in many instances, this *does not* justify a surgeon merely making a diagnosis of acute abdomen. It is essential for a surgeon to know definitely the general direction in which he is going before he opens the abdomen. There is no flood light beneath any abdominal incision and to avoid reliance on the untrustworthy maneuver of going in to see the surgeon should force himself to a careful decision and positive statement as to what he expects to find. His preferential diagnosis stated, he should of course think through all alternatives and be mentally prepared to cope with them.

The urine (second beaker for men, catheterized for women) should always be examined chemically and microscopically white and red blood cells counted and differentiated, hemoglobin estimated coagulation time and bleeding time proved and b.-p. taken before any one is asked to make a final diagnosis in a serious abdominal case with surgical possibilties.

I have made the mistake of thinking that the abdominal pain of angina was caused by a hernia or some other evident pathology. When I suspect the heart I ask for help.

Pneumonia with severe abdominal pain.—I do not attach the accepted importance to a high leukocyte count as pointing to pneumonia, for I have seen many cases of appendicitis with leukocyte count up to 35 or 40,000.

A history of bruising easily and the presence of ecchymoses should always excite suspicion of a complicatng blood dyscrasia no matter how plain the evidence of actual abdominal disease.

Few cases of Henoch's purpura seem to escape operation. In children the difficulty of getting a clear-cut history and a proper interpretation of physical signs adds to the problem. An increase of esoinophiles to 4%, which occurs in some cases, is considered diagnostic. In the absence of eosinophilia in any abdominal case associated with shifting pain we should carefully investigate for a history of joint pains, asthma, urticaria and other evidences of allergy.

Migraine and herpes zoster should be kept in mind in anomalous cases.

The gastric crises of locomotor ataxia have led to much unnecessary surgery.

Old fashioned bellyache.—If vomiting does not promptly relieve all symptoms, or diarrhea does not promptly develop, we had best drop this diagnosis and look for more serious trouble.

While constipation is the natural accompaniment of the great majority of acute surgical diseases of the abdomen, we may well impress on our consciousness that the presence of diarrhea does not exclude any of them. Since diarrhea increases the virulence of intestinal bacteria, we may expect infections associated with diarrhea to carry increased surgical risk.

Renal calculus may cause intense epigastric pain and shock without any disturbance of bladder function and without naked-eye blood in the urine.

Profound shock in the absence of severe external trauma should turn one's mind to 1) ectopic pregnancy, 2) mesenteric infarct, 3) actue gangrenous pancreatitis, or 4) spontaneous rupture of the spleen or some large blood vessel from hypertension or aneurysm.

Acute hemorrhagic pancreatitis produces unendurable agony and profound shock. Slate-blue areas said to be present over the upper abdomen in severe cases of this condition and the distended epigastrium and flat hypogastrium should make us overlook few cases, if indeed these evidences are needed in addition to shock and pain.

Mesenteric infarct when it involves a large area of the mesentery produces profound shock but the pain is less severe.

The symptoms of acute perforation of a hollow viscus with characteristic, promptly developed and general board-like rigidity are much the same no matter what the organ involved. Any of these perforations can closely simulate violent acute appendicitis,and here again a mistake in diagnosis is of more importance to the surgeon's vanity than to the patient if the surgery is properly handled.

Pain may be continuous in obstruction but that part caused by peristalsis is definitely intermittent.

My favorite error is to mistake a leaking chocolate cyst for appendicitis.

The Ninth Annual Conference of the Biological Photographic Association will be held September 14th 16th, at the Mellon Institute for Industrial Research, Pittsburgh. The program will be of interest to scientific photographers, scientists who use photography as an aid in their work, teachers in the biological fields, technical experts and serious amateurs. It will include discussions of motion picture and still photography, photomicrography, color and monochrome films, processing etc., all in the field of scientific illustrating. Up-to-date equipment will be shown in the technical exhibit; and the Print Salon

(To Page 266)

The Cardiac Complications of Funnel Breast*

J. Morrison Hutcheson, M.D., Richmond, Virginia

THE deformity known as funnel breast, pectus excavatum or trichterbrust is characterized by a depression of the lower sternum. The resulting concavity varies in size and depth; its posterior aspect may be found to approach to within a few centimeters of the spine. It has been noted also, probably as a compensatory phenomenon, that there is often an increase in the anteroposterior diameter of the thorax in the mammillary region, an increase of its transverse diameter and a lowering of the diaphragm with lengthening of the vertical diameter of the chest cavity.

A case of funnel breast was described in 1594. During the latter half of the nineteenth century occasional cases or small series of cases were reported, and in 1882 W. Ebstein summarized the reports of five cases and applied the term trichterbrust. In 1909 E. Ebstein collected 97 previously reported cases and discussed the various theories advanced as to the etiology of the condition. Few references to funnel breast appeared in the literature of this country until within the past few years.

The deformity, when it exists to any marked degree, is usually congenital; but it may be acquired in early life or it may result from trauma. The cause of the congenital type is obscure. It has been ascribed to nutritional disturbances, to embryonic defects and to intrauterine pressure exerted upon a soft sternum. In acquired cases, obstruction to breathing by adenoids, faulty posture and mediastinal adhesions have been suggested as causes. Rickets is probably the most important factor. Following injury to the sternum, especially fracture, gradually increasing depression of the lower segment has been seen to develop, due doubtless to diminished resistance to the constant in-pulling action of the normal negative intrathoracic pressure.

As one result of funnel breast various types and degrees of distortion of the anatomical relations of the heart have been found to occur. Displacement to the left, displacement upward, rotation and flattening have been described, and occasionally a deep groove or indentation on the anterior surface of the heart, corresponding to the in-bowing anterior chest wall, has been observed. In recent years the x-rays have been generally utilized for determining the extent of the deformity and for information as to the shape and position of the heart.

Though the anatomical effects of funnel breast upon the heart are well know there has been no general agreement, among those who have contributed to our knowledge of the subject, as to its effects upon cardiac function. In the first case reported it was noted that "the sternum with the ribs was turned inward from birth, causing difficulty of breathing," and dyspnea has been a prominent symptom in a large number of cases subsequently reported. Paroxysmal auricular fibrillation has been observed, friction rubs have been noted and not infrequently a degree of limitation of cardiac reserve sufficient to cause partial invalidism has been attributed to the deformity. Vierordt states that in the normal adult the distance from the ensiform to the thoracic spine is from 15 to 19 cms. Though various degrees of shortening of this diameter have been observed, there has been no correlation between the extent of the deformity and the severity of the cardiac symptoms apparently produced thereby.

Some observers have regarded even mild degrees of funnel breast as a handicap to cardiac activity and operative procedures for its correction have been undertaken in cases where the depth of the sternal depression and the amount of cardiac displacement were relatively slight. The view expressed by Schaefer and others, that the heart of the patient with trichterbrust will often become insufficient early and lead to illness, invalidism and death, seems to have been widely accepted.

On the other hand, Groedel, in 1911, reporting three cases, expressed doubt that the deformity produces cardiac failure. He believed that the lung accommodates itself to displacement as does the heart without resulting functional damage to these organs. He called attention also to the frequent association of the habitus asthenicus with funnel breast and emphasized the difficulties that may arise in distinguishing the symptoms, such as breathlessness and fatigue, that often accompany this condition, from those that might arise from pressure. Several other writers have expressed similar views. Edeiken and Wolforth in 1932 reviewed ten cases, collected from the Medical Clinic of the Hospital of the University of Pennsylvania, and concluded that uncomplicated funnel chest does not appear to have any clearly defined effect upon the functional capacity of the heart unless

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

the deformity is traumatic or of rapid development.

Surgical treatment for funnel breast, first undertaken by Ludwig Meyer in 1911 by removal of costal cartilage, was apparently unsuccessful. More recently, good results have been reported by Sauerbruch and von Hoffmeister from the resection of the sternum, with the relief of paroxysmal fibrillation, cardiac pain, dyspnea and palpitation and improvement in the general condition. In this country, Carr, in 1933, reported a case in which relief of cardiac symptoms followed resection of the lower half of the sternum, and mentioned another patient who died within forty-eight hours following the operation. In a recent bulletin of the American Heart Association, the same author refers to another operative success, but states that relief in the first case reported was temporary and that the patient's present state suggests that the results following operation were probably psychic. Alexander, in 1931, reported satisfactory results from operation in two cases of traumatic pectus excavatum.

Kuhns, in a study of funnel chest in children, states that "most writers agree with Steindler that operations are not successful and are not indicated." He believes that in every case there is evidence of decreased physical efficiency and reports marked improvement both as to the deformity and to general health from treatment by rest and postural exercises.

My interest was directed particularly to this condition by a rather striking example which came under my observation in 1930, and which I have been able to follow up to the present time.

Case 1.—A young woman of 20 was referred for advice as to an enlarged heart. The history obtained from her mother and herself indicated that she was born after a protracted and difficult labor and had never been regarded as strong. She had indulged in sports such as tennis but was easily fatigued and never able to exert herself for more than an hour at a time. As a child and adolescent she had attacks suggesting major hysteria. While in her first year at college she suffered from palpitation and precordial pain, unrelated to exercise, and an examination by the college physician revealed evidence of cardiac enlargement. This finding was said to have been confirmed by x-ray examination.

Physical examination showed a healthy-looking girl, 5 feet 7 inches tall, weighing 120 pounds. The appearance and movements of the thorax were normal, except that a well marked and rather narrow depression of the lower half of the sternum was noted. The cardiac apex was felt well outside the nipple line, the left border of dullness lay 10.5 cms. from the midsternal line, the right corresponded to the right border of the sternum. There was a sinus arrhythmia, the sounds were of good quality and a soft systolic murmur was heard at the third interspace just to the left of the sternum. The rate was 64, b.p. 98/58 and neither varied appreciably with exercise. Electrocardiogram was normal except for R waves of low amplitude. Fluoroscopic examination and six-foot films showed a marked increase in the size of the heart shadow to the left, the right border being obscured by the spine and mediastinal structures. Lateral film revealed a backward projection of the lower sternum extending to within 5 cms. of the spine. From this finding it seemed clear that the heart's right border lay entirely to the left of the midsternum and that lateral displacement rather than enlargement existed. Measurements of the heart, made with this information in mind, showed a total transverse diameter of 11.5 cms., which was less than half the transverse diameter of the chest.

Inasmuch as this patient's symptoms were not clearly cardiac and because of the neurotic background, surgical treatment was not advised, though the possibility of operative relief was explained. She was told that her heart was not enlarged but congenitally displaced by a depressed sternum, and was otherwise sound and that exercise, within the limits of comfort, was safe. Several letters have been received from her in reply to inquiries. She is self-supporting as a librarian and, though she still is easily fatigued and is obliged to limit her exertion, these symptoms have not progressed.

If one thinks of funnel breast as a deformity of possible clinical significance, it is surprising how frequently it is noted in routine examinations. In most instances it is of mild degree, yet moderate or severe grades are not as uncommon as the scant attention given the condition in textbooks would lead one to believe. When the sternal depression is noted, it is only by fluoroscopic or x-ray investigation that its extent can be determined and, with this information at hand, it is still not easy to interpret its significance in terms of cardiac disturbance. The following additional cases are cited briefly by way of illustrating the conditions under which funnel breast may be found and its variable effects upon the heart.

Case 2.—A married woman of 46 complained of palpitation, moderate dyspnea and inability to lie on the left side because of precordial distress. Examination showed an obese woman 5 feet 7.5 inches tall, weighing 200 pounds. The lower sternum was depressed, the left border of cardiac dullness 10 cms. from the midsternal line, the b.p. somewhat elevated. The heart's action was normal with no murmurs. Electrocardiogram was normal except for left axis deviation. X-ray examination revealed a backward curving of the sternum, approaching within 13 cms. of the spine and in contact with the heart. The anteroposterior diameter of the heart was 15.5, transverse diameter 16 cms. It seems likely that in this case a mild degree of funnel breast became important only after obesity with hypertension and cardiac hypertrophy appeared.

Case 3.—A married woman, 56, complained of continuous pain in the left shoulder and arm of one month's duration and smothering spells and heart consciousness for many years, not related to exercise. Her response to effort had been reasonably good. Examination showed funnel breast with the left border of cardiac dulness 12 cms. from the midsternum. The rhythm was normal and no murmurs were heard. b.-p. 146/78, electrocardiogram normal except for left axis deviation. Upward movement of the arm was painful and it seemed clear that a bursitis was the cause of her pain. X-ray examination showed the heart apparently displaced to the left. The distance from sternum to spine was 11.5 cms. Anteroposterior diameter of heart was 12.5 cms.

Case 4.—A farmer, 49, seen April 14th, 1935, complained of nervousness and high b.-p. Physical examination was rather negative except for marked funnel breast and Harrison's groove. The heart was not enlarged, the sounds were normal and b.p. 140/88. The electrocardiogram showed inversion of T wave in leads II and III and left

axis deviation. X-ray picture indicated a vertical heart not appreciably enlarged. The anteroposterior diameter of the thorax was 8 cms. and the heart appeared displaced backward and flattened.

The symptoms were predominantly mental. Though the electrocardiogram suggested coronary disease, it was by no means clear that any of his symptoms were cardiac. Soon afterward he was admitted to an institution for mental cases, where he has remained for more than two years.

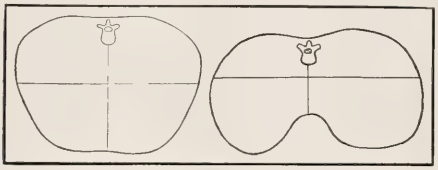


Fig. 1. - (a) Outline normal chest.
(b) Chest in funnel breast.

Case 5.—A merchant of 63, seen Nov. 17th, 1936, complained of nervousness and attacks of faintness and dizziness which he feared were caused by heart disease. There had been no pain, dyspnea or palpitation. Examination was negative except for marked funnel breast. The electrocardiogram showed R waves of low amplitude throughout. X-ray showed no enlargement or displacement of the heart, though the organ was apparently in contact with the sternum. Anteroposterior diameter of thorax was 11.5 cms. In addition to the obviously neurotic background, the history and low blood sugar suggested the possibility of hypoglycemia and it was concluded that cardiac function was normal.

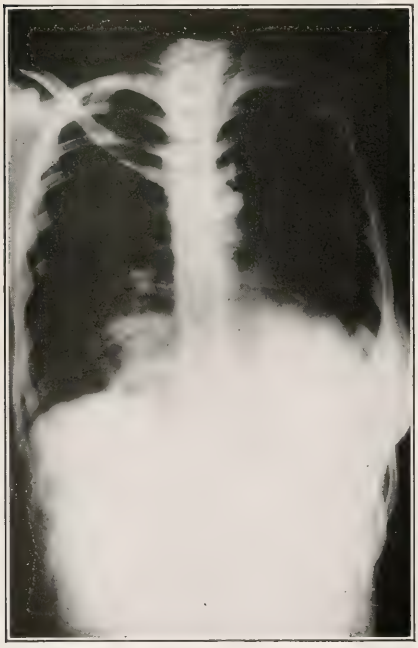


Fig. 2.—Case 1. Seven foot plate showing marked enlargement of the heart shadow to the left.

Fig. 3.—Case 1. Lateral view. Sternum projects backward.

Case 6.—A married woman of 28 complained of nervousness and loss of weight. There had been no chest symptoms. Routine examination showed well marked funnel breast with increase of cardiac dulness toward the left. Auscultation was negative and electrocardiogram normal. X-ray examinaton showed the sternum depressed to within 7.5 cms. of the spine, with the heart entirely to the left and almost in contact with the left lateral chest wall.

"Of the six patients here reported, in whom moderate or severe funnel breast was observed, three showed definite and one questionable displacement of the heart to the left. In the other two cases the anterior surface of the heart was in contact with the sternum and in one case was apparently displaced backward. In no instance was definite enlargement or distortion from the deformity made out, but doubtless a certain amount of rotation was overlooked. There were no disturbances of rhythm noted, no friction heard and in only one case was a systolic murmur detected. The electrocardiogram revealed left axis deviation in three cases but in only one of these was the heart displaced to the left, while in the two patients with the greatest degree of displacement the electrical axis was unchanged.

Five patients complained of some type of heart consciousness, but in no instance was objective evidence of impairment of cardiac function demons-

(To Page 272)

Pneumonia—Home Treatment*

Harold Glascock, Jr. M.D., Raleigh, North Carolina.
Mary Elizabeth Hospital

PNEUMONIA is still one of the chief causes of death in this part of the United States even though we physicians have at our disposal methods of treatment which if properly used might easily lower its high mortality. Since we are now in the midst of the so-called pneumonia season it is appropriate, it seems to me, that we again stop to consider these agents and their application to the disease in our respective states.

Figures taken from the annual reports of the North Carolina Department of Health show that there has been an increase in population of a half-million, 15%, in the State from 1931 to 1938, while the number of deaths from pneumonia has risen 85% during the same period. During winter months between 300 and 500 die within 30 days; 1936 was the peak year—3,239 deaths from pneumonia. Among children this disease ranks second only to tuberculosis as the captain of death, as shown by an analysis made in the same department. No doubt similar findings are available in Virginia and South Carolina.

In my opinion this is due in part to the lack of education of the population as to the seriousness of the disease, as well as to ignorance of how to prevent its development. Even if we could convince the laymen that the time to call the physician is as soon as a chill is noted in connection with a cold, we might accomplish wonders in the control of pneumonia. But enough concerning education. My main consideration is the use of oxygen, intravenous fluids and specific antiserum in the home in this condition.

I need not be concerned with the history of the development of these modes of therapy. We are all familiar with their uses, but we have been handicapped, at least up until the present time, by the cumbersome apparatus necessary for their application, and the aura of cautiousness thrown around them by the hospital physicians and the manufacturers. It is my hope that I may be able to show you here today some apparatus which you can easily make use of, and to dispel some of the fear of the use of serum.

We are told that the only place to treat a case of pneumonia is in the hospital under the care of a physician who has had experience with the disease. In my opinion few physicians have had more experience with it than some of us sitting here, and I am confident that a 20- to 30-mile trip in the back seat of an automobile is often as much responsible for the death as any other factor. We are told that serum reactions are dangerous and frequent, and that we cannot handle them. Gentlemen, if we carry adrenalin, morphine, atropine and other comon drugs in our bags we are as capable of managing a reaction as they.

Let us see how we can keep the pneumonia patient at home and yet treat him as well as if he were in the best equipped hospital in the land. By providing ourselves with a few vials of typing serum and a microscope, we can easily type the organism and determine whether a potent antiserum is available. Neufeld's capsule-swelling reaction is so definite when positive that it hits one in the eye so to speak, and one is unlikely to go wrong if the case has reached the stage of a rusty sputum.

Once the type has been determined a call to your nearest distributor will make the serum available to you by the fastest means of transportation. Your order should be with the understanding that the excess may be returned if unopened and kept in cold storage. It remains then to have conjunctival and intradermal tests to be performed for sensitivity to horse serum and to make sure that the necessary emergency drugs are available for immediate use.

It has been found that if five minims of adrenalin be given five minutes before the injection of serum is begun, the danger of a serum reaction is practically negligible, but a syringe of adrenalin should be kept in readiness for the sake of safety. The serum is then warmed gently on the kitchen stove and injected very slowly into a vein. Should an immediate reaction develop, injection is stopped at once and adrenalin given as indicated in doses of ten to fifteen minims. Other stimulants for respiration or circulation may be used. The calming effect of morphine is helpful. Should no reaction develop the patient's temperature should be watched for the next four to six hours. Depending upon whether it begins to fall or not, more serum may be given.

The manufacturer's plan of 10,000 units followed in two hours by 20,000 units and so on seems

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charlotte, [illegible] 20th-21st.

to me to be unnecessary. One should be governed entirely by the patient's response to the dose and this cannot be determined in two hours. I have been down into the country to give serum for a colleague on several occasions. I have on several of these occasions given a single 20,000 unit dose of serum on the fourth day of the disease in patients of middle age or beyond, and had the patient's fever return to normal in twelve hours. In these cases less than ten dollars worth of serum did the trick. Do not let the fact that the patient has been ill for more than four or five days prevent the use of serum. Give serum on the tenth day if the patient has shown no sign of improvement up to that time. I have seen one dose of 20,000 units induce a crisis on the ninth day of the illness. You can actually see the patient become less toxic in a few hours following the use of serum of the proper type.

I might mention here that chill reactions in most cases may be forestalled by the administration of five grains of aspirin 30 minutes before the injection is begun. The ability of serum to lower the mortality rate depends upon its widespread use. This has been conclusively shown in the use of diphtheria antiserum. Had it been confined to the hospitals, diphtheria would still be the dread disease of childhood. Is the use of this antitoxin less dangerous than that of pneumonia? I think not.

As for hospital care, I am sure that each of us knows some trained nurse in our locality who would be glad to learn to work as a part of a pneumonia team. A good nurse on twenty-four hour duty can accomplish just as much, if not more, than the average floor nurse in a hospital. Nine times out of ten a toxic pneumonia patient requires a special nurse even if he be in a private room in a hospital. Why not let her nurse the patient at home and save the hospital expense so that the patient may have something left to pay his other bills when the dangerous stage is past.

Should a patient reach the stage at which it becomes advisable to resort to oxygen, we no longer have to resort to the complicated and cumbersome oxygen tent. By providing ourselves with a B-L-B oxygen mask and the simple safety bottle with a reduction valve, we can administer oxygen even more efficiently than with a tent. We can even give 100 per cent oxygen in an emergency. The mask costs about twenty dollars, the valve twenty-five, the bottle and tubing not more than one dollar. Tanks of oxygen (commercial) can be obtained from distributors for about $6.00 for 2,000 gallons. If you invest in such equipment as this, you can easily pay for it during one season. The mask is also of great value in asthma in which 80% helium is used to replace nitrogen of air. Helium is lighter than nitrogen. Intravenous fluids sterile and ready for use can be purchased at relatively low cost. Needles and tubing cost very little, and can be prepared for use by boiling on that same kitchen stove. Transfusions of blood or plasma can be given very simply with the same apparatus, plasma preferably because it supplies complement, and red cells and hemoglobin are not needed.

In case your pneumonias do not type out, sulfanilamide, or its newer form, sulfapyridine, may be found very helpful, but I for one can not put my faith in these drugs alone when we have a specific of proven value when these have not stood the test of time as yet. At best they only attenuate the bacteria. Antitoxin is needed to combat toxemias.

I hope that I have stimulated your interest in treating your pneumonias at home, saving them the expense of hospitalization and saving their lives by the widespread use of serum.

With these modern methods of treatment the pneumonia patient should have his crisis within 24 hours after the doctor's first visit. A disease of this duration certainly does not warrant the necessity for hospitalization. Should the disease be more prolonged than 48 hours then hospitalization may be resorted to for the sake of the family, but I for one do not believe the patient will be benefitted if the measures described have failed.

(This and the next paper discussed together)

THE UNIVERSITY OF WISCONSIN MEDICAL SCHOOL'S INSTITUTE FOR THE CONSIDERATION OF THE BLOOD AND THE BLOOD-FORMING ORGANS

Sept. 4th-6th

There will be round-table discussions by European and American workers in the field of hematology. In addition, the following formal papers are to be presented:

Dr. L. J. Witts, Oxford, England, Anemias due to Iron Deficiency

Dr. Cecil J. Watson, Minneapolis, The Porphyrins and Diseases of the Blood

Dr. Cornelius P. Rhoads, New York, Aplastic Anemia

Dr. E. Meulengracht, Copenhagen, Denmark, Some Etiological Factors in Pernicious Anemia and Related Macrocytic Anemias

Dr. Harry Eagle, Baltimore, The Coagulation of Blood

Dr. George R. Minot, Boston, Anemias of Nutritional Deficiency

Dr. Russell L. Haden, Cleveland, The Nature of the Hemolytic Anemas

Dr. Jacob Furth, New York, Experimental Leukemia

Dr. Claude E. Forkner, New York, Monocytic Leukemia and Aleukocythemic Leukemia

Dr. Edward B. Krumbhaar, Philadelphia, Hodgkin's Disease

Dr. Louis K. Diamond, Boston, The Erythroblastic Anemias

Dr. Edwin E. Osgood, Portland, Marrow Cultures

(To Page 290)

Pneumonia —Treatment Without Serum in the Family of Low Income*

R. C. Miller, M.D., Gastonia, North Carolina.

THE symptoms of pneumonia should be too well known to need mention. The physician who treats pneumonia will have to sign some death certificates, the relative number of certificates to the number of patients he treats will depend upon several factors: *viz.*, the doctor's ability as a physician, the coöperation of the patient's family, the medical lore of the neighborhood, the construction of the home, the family income and to a certain degree to the estimated value of the patient to the community.

A worthless patient most always recovers, a useful one frequently succumbs in spite of everything that is done to speed recovery. (Just here I would like to remark that sometimes too much is done for the patient's benefit). Some families do not know enough to carry out instructions. The old women of the community will insist on poulticing and plastering the patient to death. Some habitations are so poorly constructed that a patient cannot be bathed or have clothes changed without too much shock in severe weather. A warm bath and a change of clothing, though the family is afraid it will kill, gives the forlorn-looking patient much comfort and, frequently, sleep; removes the accumulation of sour-smelling sweat and prevents resorption of body wastes eliminated through the skin.

I do not belong to the school of therapeutic nihilists who believe there is nothing to giving medicine. Twenty years ago I bought a copy of "Internal Secretions and Principles of Medicine" by Sajous, and in searching for something for the treatment of pneumonia found this: "Creosote carbonate administered early is as nearly specific in pneumonia as quinine is in malaria provided sufficiently large doses, ten to fifteen grains be given frequently enough; *i.e.*, every two or three hour. Creosote carbonate produces no gastric disorders and, although the urine is rendered smoky it causes no renal or cystic disturbances, even when the above doses are increased two or three times. The accumulation of toxins which occur under other treatments does not take place owing to the feeble resistance of the specific organism of pneumonia and the influence of the remedy, and the crisis is often replaced by lysis. The fever may, in fact, disappear within forty-eight hours. It is usually given in a menstruum of glycerin and peppermint water. It must be continued two or three days after the subsidence of the fever to avoid recurrence."

The body fluids must be supplied with sufficient water and alkaline salts to maintain the proper fluidity of the blood. Some years ago I received a Bulletin, issued, I think, by The Johnston-Willis Hospital of Richmond, Va., in which there was a discussion of the results of posture in the treatment of the unconscious patient. These patients were turned prone with the foot of the bed elevated for certain periods each day so that nature would assist in drainage of the accumulated mucus from the respiratory tract.

I have my pneumonia patients turned to the prone position and the foot of the bed elevated about 15 inches for periods of 20 to 30 minutes every two hours when there is any difficulty in breathing due to filling of the lungs. In infants and small children I have the gown pinned to the mattress during this period of drainage to prevent slipping against the head of the bed. The patient who becomes stuporous with pneumonia will soon pass into coma and drown in his own secretions if left in the supine position for any great length of time, so elevate them every two hours and allow drainage. There is no medicine that will prevent drowning by the patient in coma if he is not well nursed.

I have about an average-size practice for one engaged in general practice in an industrial center and have not signed a death certificate for a patient dying of pneumonia in the past two years.

I am not condemning the use of laboratory investigations into the causative agent in pneumonia, but these can be carried out while the patient is receiving generous doses of creosote carbonate every three hours, and by the time you have arrived at the type of organism that is producing the trouble your patient is also making a decided turn for the better. You will not have to forego your entire fee for treatment and the patient will not have accummulated a hundred-dollar debt for serum.

I mentioned the unconscious patient in the treatment of pneumonia because I do not see some patients until the pneumonia has made considerable progress and a condition soon supervenes that requires all your ability to postpone a funeral.

Discussion (of the two papers)

Dr. J. F. Nash, St. Pauls, N. C.:

We should feel honored in having these two papers on pneumonia in which it is clearly advised that pneumonia can be suuccessfully treated in the home. Thus the danger of moving the patient for miles, probably in the back seat

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

trable. In three cases psychic disturbances were noted, namely, hysteria, psychoneurosis and in one manic-depressive psychosis. Surgical treatment was considered in one case, but the subsequent course over eight years seems to justify its rejection.

In conclusion the following observations seem worthy of note:

1. Cardiac displacement from funnel breast may easily give the clinical appearance of cardiac enlargement and is not detected by the usual six-foot film.

2. Displacement to the left or compression is compatible with good cardiac function and there may be, even with a marked displacement, a complete absence of chest symptoms as noted in Case 6.

As regards treatment, the observations of Kuhns on recognizing the deformity in childhood and management by adequate rest and postural exercises are worthy of notice. In adults an occasional case may bring up the question of operative intervention, which has been admirably summarized by James G. Carr as follows: "In the presence of persistent and increasing evidence of cardiac embarrassment not persistent and increasing evidence of cardiac embarrassment not based upon other diseases, surgery should be considered. In determining the indications for operative procedure three factors are of especial importance:

(a) Care must be taken to evaluate the nervous symptoms which are so prominent in most cases.

(b) The traumatic type appears to offer the best promise of satisfactory results following operation.

(c) Surgery should be undertaken only after careful appraisal of the indications and with due regard to the magnitude of the operation.

Final evaluation of the operation must be postponed for some time.

References

STEINDLER, A.: Diseases and Deformities of the Spine and Thorax. *C. V. Mosby Co.*, 1929.

KUHNS J. S.: Funnel Chest Deformity. *New England Jour. Med.*, 1931, 204-1077.

ALEXANDER, J.: Traumatic Pectus Excavatum. *Ann Surgery*, 1931, 93-489.

CARR, JAMES G.: The Cardiac Complications of Trichterbrust. *Ann. Int. Med.*, Jan., 1932, p. 885.

CARR, JAMES G.: Modern Concepts of Cardiovascular Disease, 1938, Vol. VII, No. 2.

EDEIKEN, J., and WOLFERTH, C. C.: *Am. Jour. Med. Sci.*, October, 1932, p. 445.

NORRIS and LANDIS: Diseases of the Chest. *W. B. Saunders Co.*

Discussion

DR. C. M. GILMORE, Greensboro:

Frequently in medicine we do not get over solving one problem before another comes up. The problem of rickets will in the next few years disappear, probably; but as that disappears we have the increasing problem of automobile accidents. Deformity of chest sometimes comes after automobile accidents. A case of my own which I thought to be an enlarged heart turned out to be a displacement. The public is now heart conscious. Many times we have to convince people that there is nothing wrong with the heart. Instead of actual heart trouble there is the fear of it. An element of confusion is the sensitiveness of the heart even to emotional strain and worry. Dr. Hutcheson has called attention to the fact that x-ray evidence is not always dependable and that we should often have additional pictures made, besides utilizing other means of investigation. In all this I heartily concur.

Foreign Bodies of the Cornea.

C. E. Dunaway, *Miami*, in *J. Fla. Med Asso.*, May)

The upper lid should be everted in all cases, even though a foreign body is seen on the cornea, and the upper cul-de-sac inspected. Fluorescein, 1%, should be used in those cases where no foreign body is visible with a loupe and focal light, as a faint stain will often show a foreign body which would otherwise be overlooked. Pinpoint ulcers and fine foreign bodies are often seen only at one tangent and not straight ahead. The differential diagnosis should include the brown pigment spots on the iris which are often taken for foreign bodies deep in the cornea and the presence of previous small nebulae.

The first essential in removing a foreign body is thorough anesthesia of the cornea. I prefer pontocaine, ½% solution. A drop of adrenalin may be used if much congestion is present but usually it is not necessary. The eye is then irrigated with 1-5000 solution of oxycyanide of mercury.

Proper illumination with head lamp or head mirror and proper magnification are essential.

The loupe originated by Dr. Nelson M. Black of Miami may be carried in an ordinary spectacle case. It consists of a pair of carrier lenses to each of which is cemented a 5° prism, Base In, with a plus 4.00 spherical power. It is advisable when the operator requires a correction, especially for near work, that this correction be added to the carrier lenses. These lenses may be mounted in any desirable spectacle frame.

When the foreign body is deep a sharp spud should be used to undermine the edges. Use great care so that the offending material is not pushed deeper. If any rust is present remove it by the use of a dental bur, size ½, held between the index finger and thumb of the right hand, placed on the site formerly occupied by the foreign body and then rotated, with the most delicate touch. The wound is then cauterized with phenol, using a round toothpick.

If the wound is clean and there are no inflammatory symptoms present, butyn ophthalmic ointment 2% is applied to the lower conjunctival sac and gently massaged over the eyeballs. Bandaging an eye after this treatment is absolutely contraindicated.

A tube of butyn ointment is given to the patient, and he is advised to use it every 2 or 3 hours until the following morning, or as long as he is in pain. He is instructed to report at the office the following day if he has any discomfort. If there are inflammatory symptoms, which sometimes are caused by delayed removal, and the tension of the eye is normal, 2 drops of a 2% solution of homatropine are instilled into the eye, and the patient is advised to use hot compresses at home, returning the following morning for further treatment. When he returns if the inflammatory symptoms are still present, 2 drops of a 1% solution of atropine are instilled into the eye, and the patient is instructed to report daily for treatment until recovery is complete.

Before discharging the patient as cured, his visual acuity should be taken, as frequently these patients go to court claiming loss of vision.

Common Functional Foot Disorders*

J. T. Saunders, M. D., Asheville, North Carolina.

THIS discusion will be limited to those common foot conditions seen often by men in general practice and includes flatfoot, metatarsalgia, bunions and arthritis.

One of the commonest ailments of civilized life is what is wrongly called flatfoot. Shoe stores all carry different types of arch supporters of varying degrees of viciousness and virtue. The relation of this common ailment to faulty posture is intimate. Try the experiment of standing with your shoulders forward, your chest flat, your abdomen relaxed, and your knees slightly bent, and attempt without changing your position to lift the toes from the ground. It practically can not be done until the dead weight is shifted by a change of posture to relieve the ligamentous strain. Stand poised easily on the feet, weight between heel and toe, the lumbar spine flat, the chin back and see how much free foot action is in standing and how the load is lifted from the arches.

Flatfoot is a term that should be abandoned to describe simple arch strain or faulty weight-bearing, and should be reserved for feet that are really flat, like the rocker foot of many shoe-wearing negroes. The highness or lowness of the arches as criteria for judgment as to the efficiency of any foot should be cleared from our minds. It is a question rather of proper muscle balance and of the habitual position in which the foot is used in function which determines its efficiency as an important part of the body machine. If you will note the line of weight-bearing thrust through the longitudinal axis of the tibia, you will perceive that it falls through the foot slightly to the medial or big-toe side of the longitudinal axis of the foot. Weight-bearing, therefore, tends in the bony foot unsupported by ligaments or muscles to cause it to slump on the medial or big-toe side, more force being exerted medially than laterally. Moreover, there is no true keystone to the longitudinal arch of the foot.

Body weight is transmitted through the tibia to the astragalus and thence to the os calcis and forefoot. The joint motion between the tibia and the astragalus is for practical purposes a hinge joint, up and down. There is almost no sideways play between the malleoli. The joint motion between the astragalus and the os calcis is more complex. There is the main dome-shaped facet of the os calcis which articulates with the astragalus and, in addition, a smaller flatter facet far to the inner side which acts as a prop to prevent the astragalus from sagging inwards and downwards. If such sagging occurs the tibia is rotated inwards, carrying with it the knee and in turn tending to a tipping down of the front of the pelvis. Thus a lordotic or sagging lumbar region is produced and so-called flatfoot becomes directly connected with poor posture. If this descent of the head of the astragalus is not inhibited by the calcaneoscaphoid ligament and controlled by the pull of muscles, we have faulty statics at once, and the potential of foot strain. The joints between the astragalus, os calcis and scaphoid and their adjacent strong ligaments have to do with most of the motion concerned with faulty statics and foot strain.

The tarsal and metatarsal bones form not only a longitudinal arch, but also a low transverse arch. In normal weight-bearing the foot sustains most of the weight at three points. These are the tubercle of the os calcis and the heads of the first and fifth metatarsal bones. The anterior or transverse arch is formed by the heads of the metatarsal bones. It has no semblance of a keystone. Its component parts do not even articulate with each other. It is maintained almost wholly by muscular action and its ligamentous support is very weak.

Normally balanced muscular action is necessary for a normally balanced foot. While standing the muscles are extremely elastic and active and are balanced on inner and outer sides. Those on the inner side—the tibialis anticus, the tibialis posticus and the flexor longus hallucis—are stronger in the ratio of five to four than the peroneal group on the outer side, and this greater strength is necessary to take care of the mechanical disadvantage of the weight-bearing thrust. We find that in the cases presenting the symptoms and signs of foot strain this ratio varies, so that in an extreme case it may be actually reversed and the peroneal or outer group possess the greater power.

If the calf group is contracted so that the tendo Achillis does not allow the foot to be dorsally flexed to or a little beyond a right angle when the knee is held in full extension, then the foot will take the ground in a pronated or valgus position because this relaxes the calf group. Imbalance

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

consisting of a contracted calf is of common occurrence and one of the most frequent findings in foot strain. Structural changes in the foot are gradually brought about incident to the heel tending to leave the ground early in the stride. To avoid this the heel rolls into valgus and the associated rolling outward of the forefoot and sagging of the astragalus are brought about. Definite changes in length of ligaments and of balance between other muscle groups are often secondary to a short calf group. It is very difficult, and frequently impossible, to correct faulty foot posture until after a contracted calf group is lengthened by stretching exercises or, rarely, by surgery. These patients will be more comfortable in high heels, though this does not solve the problem.

The most frequently found causes of foot strain are six in number.

First is general debility from sickness or worry, the foot often expressing by pain the generally relaxed, fatigued condition.

Second is faulty posture alone, causing inward rotation of the tibia which in turn causes inward rotation and sagging of the head of the astragalus, leaving the forefoot pointing outward.

Third is a lack of proper muscle balance between the inner and the outer side muscle groups, or more commonly a calf group which does not allow the foot to be dorsally flexed to a right angle with the knee in extension.

Fourth is a change of occupation as from a sitting to a standing one.

Fifth, a rapid increase in weight.

Sixth is the modern civilized shoe with its tendency to throw the foot outwards and to weaken the protecting ligaments and muscles by cramping the foot.

Among savage tribes and among peoples who wear even heavy shoes or sandals made to the pattern of a line drawn about the naked foot, foot strain is a rare complaint. Try the experiment of standing on the naked foot and drawing a pencil line about the foot. Next superimpose the sole of the shoe on this outline and you will find that all women's shoes and most men's shoes will show a shoe-sole outline smaller in certain places.

The chief symptoms in adolescents and adults are fatigue, pain or ache; the pain is worse while standing than while walking, the reason for this being that when a person walks he uses his muscles chiefly, and when he stands the muscles which are weak relax and throw the strain upon the ligaments which are not sufficiently strong to withstand the strain. Tenderness is present especially over the calcaneoscaphoid ligament, also the astragaloscaphoid ligament and the ligament between the scaphoid and first cunieform bone.

Calluses quickly form beneath the metatarsal heads when foot strain is present and especially when the metatarsal arch is unsupported. If such weak arches are subjected to a sudden unaccustomed strain, like playing tennis on a hard court, pain is felt and there is a tenderness like a stone bruise over the heads of the metatarsals.

One definite symptom-complex is occasionally associated with the giving-way of the anterior arch. It is called metatarsalgia, first described, in 1878, by Morton of Philadelphia and often called Morton's toe. It consists of a sudden intense pain referred usually to the base of the fourth toe, but sometimes to the other toes often compelling the sufferer to remove the shoe, no matter what the circumstances of polite society may be. The cramp-like, lancinating pain must be relieved by manipulating manually the metatarsal head and relieving the pressure on the digital nerve. The attacks are intermittent and by no means commoon to all cases of anterior arch strain.

Bunions cause a great deal of discomfort when extensive, often causing limited activity, and have been known to alter a patient's disposition for the worse. A bunion is a bursitis in the region of the big-toe joint. Hallux valgus associated usually with first metatarsus varus and a medial exostosis or overgrowth of bone is the cause of deformity. Skin pressure produces the bursa, which becomes inflamed and painful. Perhaps in 90 per cent of cases the cause of this condition is hereditary medial deviation of the first metatarsal, similar to the deviation of the metacarpal of the thumb and often there is an accessory cuneiform bone at its base. Improper shoe pressure is not the real cause of the underlying condition, but of course aggravates it and produces the bursa. This is proved by the structure of feet with hallux valgus; by the high frequency of its occurrence among men who wear sensible shoes; and by the personal observation of an 8-year-old Negro girl with extensive hallux valgus who had not worn shoes. Short or pointed shoes undoubtedly produce pressure at this point and bring on symptoms. Treatment is directed to relieving the pressure. It can be done in advanced cases by cutting the shoe or having a pocket built of glove leather over the bunion. Operative removal with correction of the deformity is, at times, highly successful when properly done. The most familiar operations designed to correct the deformity are those of Silver, Porter, Mayo, Henderson and Keller. No one operation is adaptable to every case. The surgeon must individualize the procedure based upon the deformity and the roentgen-ray findings. Recuperation from the operation usually requires ten to fourteen days in bed and from four to six weeks total loss of time

from one's usual activities.

Arthritis is of common occurrence in feet, and is usually associated with arthritic changes elsewhere. Arthritic changes of both atrophic and hypertrophic types occur most frequently where there is static strain and for this reason changes are often found in feet under strain. The so-called calcaneal spur is a deposit of amorphous calcium salts in the attachment of the long plantar ligament to the os calcis and not a growth from the bone. It is similar to the deposit found in the ligaments between vertebral bodies and elsewhere throughout the body. This spur formation is found just as frequently in patients without as with gonorrheal infection.

Treatment of these common conditions depends upon an attempt to remove strain if present, to build up weak musculature and improve posture. A change from poorly fitting to correct shoes often suffices by removing sufficient strain to allow recuperation. Special exercises for the restoration of normal muscle balance have been devised. It is thought best to first remove the influence of a tight calf if present, by stretching, before exercises are done to strengthen the supinators and those intrinsic muscles which flex the toes and act as bowstrings for the arches. They must be taken at some time in the day when the muscles are not fatigued. As the muscles become stronger, more strenuous exercises in weight-bearing can be given, such as pulling up the longitudinal arch, rolling onto the outer borders of the feet, walking on the heels with the big toes facing each other, and so forth. When exercises are carried out faithfully, most foot strain may be permanently relieved.

The use of arch supports and special corrective shoes at times gives instant relief but does not correct the underlying cause. They act as crutches and there is danger of paying for freedom from pain by a "bondage of steel." Ready-made arch supports are not much more rational than ready made artificial teeth would be. Arch supports are especially pernicious on children and should never be used without exercises being done regularly.

For growing feet much can often be accomplished by the use of wedges of leather on the heel and at times on the sole of the shoe. These wedges do not function as arch supports do, but tend to force the foot into proper posture while actively in use and allow perfect freedom of motion. Thus the influence of special exercises is extended to normal walking.

Extreme degrees of outward rotation of the foot may require operative procedures for relief, but only rarely.

We must base treatment on the etiology and avoid all semblance of routine, and we must carefully discriminate foot symptoms arising from faulty statics and those due to circulatory and metabolic disturbances.

WE MUST STUDY THE PHENOMENA THAT WE OBSERVE
(J. N. HALL, in *Ry. Mn. Med. J.*, May)

One of my questions asked every year at the old County Hospital Clinics might seem utterly trival.

The question was, "Did you ever see a colored ballet dancer?" No student ever answered in the affirmative. From childhood, these students had heard jokes about a Negro's foot so flat "that the hollow of it made a hole in the ground;" of his long heel, and his stringy looking calves. Still, no one of them connected these various items together to make a complete picture. The long heel means a long os calcis. This construction, with a longer longitudinal arch, favors the development of flatfoot. The foot constitutes a lever of the second class, in which the weight to be raised (the body) comes between the fulcrum (the ball of the foot) and the power (the calf muscles applying their power through the heel tendon to the tip of the os calcis). The longer the heel bone the greater the leverage. Hence, less muscular tissue being required, we have the less rounded calf muscles of the colored race as contrasted to the well developed calf of the Caucasian. This construction seems to be in every way as efficient as that of the white race as is so well shown in the athletic records of the Negro; but no one would contend that it appeals to the eye as does the well-rounded calf of the white woman. Hence, no colored ballet dancers!

Any observation, however trivial it may appear, may lead to a valuable conclusion, but not without sufficient curiosity to lead the maker of it to seek for its significance.

THE LOST DRAIN AND ITS ROENTGEN RAY IDENTIFICATION
(H. S. Grossen and W. G. Scott, St. Louis, in *Jl. Mo. State Med. Asso.*, May)

Experimental work with a model pelvis showed that ordinary red rubber tubing, even of the small Dakin tube size should be roentgen-ray-visible in the pelvis of the most obese patient. This was later confirmed by filming postoperative patients with such drains in position.

The amber tubing and black tubing, which are usually used for drainage, cast no shadow in the smaller sizes and poor shadows in the larger sizes.

Ordinary red tubing is therefore preferable for drainage use.

To prevent drains from slipping out of place: In vaginal drains a substantial T formation is satisfactory. In drains through an abdominal incision, security is attained by using a saftey-pin continually until the drain is entirely removed. For a small superficial drainage tract where the smallest drain (Dakin tube) is used, a substantial T formation may be employed as in the vaginal drain.

The last Minesota State Legislature passed a law, similar to those already passed by some 16 other state legislatures limiting the sale of barbiturates to the public on prescription only.

ACNE.—Sulphur lotion is still remedy No. 1. Begin with weak solution, and if skin is very susceptible, apply only every 2nd or 3rd day.—White.

LEAD POISONING OF INFANTS. At least 3 cases have been reported due to the use of lead nipple shields.

The Value of Basal Metabolism in Hyperthyroidism
A Review

William Francis Martin, M.D., F.A.C.S., Charlotte, North Carolina.

THE value of basal metabolism as a guide to the (surgical) treatment of hyperthyroidism has been repeatedly questioned. While few are in agreement with Hertzler[8] that basal metabolism rate as a guide to operability is wholly useless, there is a growing tendency to recognise, with Means[6] that clinical evaluation should play the major role.

This does not imply that the testing of basal metabolism is of no value whatever, but that, as George Crile, junior, has described it[3], the test is "...merely a laboratory procedure," and that it should give priority of place to consideration of clinical symptoms. It is a procedure which may produce some confirmatory evidence, but as a guide to action it should be considered with caution.

Means[8], over a period of years has gradually changed his views on this subject and is now inclined to soften the statement that in hyperthyroidism basal metabolism rate is the best index of severity of the disease. He now considers that any figures worthy of consideration can be achieved only by making a long series of tests the figures so obtained to be regarded by the surgeon with critical judgement.

As a guide to the need for surgical intervention Crile (senior) considers[3] that one of the pitfalls of thyroid surgery is that of depending on the basal metabolism rate for setting the time and determining the extent of operation, while Goetsch[5] affirms that reliance must not be placed upon the metabolic rate test alone in estimating the patient's ability to withstand operation and Lahey (private conversation) affirms that he also has reached the conclusion that the clinical picture is the most reliable guide for action.

There are patients whose metabolism rate will remain normal or even subnormal, when all the clinical symptoms of toxicity are manifest. Greene and Greene, Bayley and many others have met cases of this type and the writer has seen not a few. Means recognises that genuine hyperthyroidism may exist with a basal metabolism level of minus-15, for as he has found by making repeated tests, there is a considerable variation in the metabolic rate of normal persons from individual to individual.

Mild toxicity may, by its cumulative effect, dangerously reduce strength, accelerate the pulse rate and strain every organ—produce, in short, every clinical indication for radical treatment—and the basal metabolism rate remain low. More stones are worn away by dripping than by cloudbursts. Bayley[1] had the unfortunate experience of the death of a patient in a thyroid crisis following seven weeks of medical treatment when the basal metabolism rate (recorded two weeks after the initiation of treatment) was minus-two. Obviously morbidity factors were present of which the basal metabolism rate was no indication. While the basal metabolism rate may be misleadingly low, it may also be misleadingly high. The writer has had patients with all the usual symptoms of hypothyroidism as to weight, pulse and manner, with modification of symptoms on tentative administration of thyroid extract, yet whose basal metabolism rate was recorded as plus-20, or even 30. Such experiences confirm the opinion that in fairness to one's patients one should be a doctor first and a technician last.

Jackson[7] has shown that a variety of basal metabolism readings may be obtained from patients at various tests. If a patient breaths rapidly, is nervous, cold, or fevered, has recently exercised or eaten, the rate recorded is higher than it would otherwise have been. While provision may be made against some of these factors (*e.g.*, control of food intake), nervousness is more difficult to control, especially with the characteristically nervous hyperthyroid patient. It is impossible to measure the nervousness of a patient at the anticipative thought of a test; whereas testing without previous warning may, by its very suddenness, have an exciting effect. It is also impossible to check on all possible causes of nervousness in a patient's life, some of which may be of active importance at the time of testing.

That human and mechanical factors play a part in the inaccurracy of tests, even thoose made with the best instruments and by experienced technicians, is indisputable. Means[8] and Jackson[7] are both of the opinion that inaccuracies tend to make rates misleadingly high (hence Means regards a single low reading as of more importance than a single high one), and one recoils to think how many unnecessary or ill-judged thyroidectomies may have been performed on the evidence of these high recordings.

Were it possible to make no greater charge against the recording of basal metabolism rates than that they may be misleading one would hesi-

tate to express one's views, but many surgeons have been driven to the conclusion that the test may be definitely harmful in the presence of hyperthyroidism, due to the exciting effects upon the patient. Bayley[1] affirms that to attempt a basal metabolism determination of a highly toxic thyroid patient is often of little diagnostic value and at the same time may be an added risk to the patient's life. He had this conclusion thrust upon him by the death of no fewer than four patients in thyroid crisis following basal metabolism tests. We may consider that Crile (senior) supports Bayley in this view for he states[2] that a definite mortality rate may be expected solely from the testing of the basal metabolism rate. In cases of hyperthyroidism he points out that it may just about cancel the quietening effect of rest, Lugol's solution and sedatives.

Conclusion

There is a growing consensus of opinion that basal metabolism rate is not the reliable measure of hyperthyroidism that it was once thought to be. Mechanical and human factors, unchecked iodine administration (as with iodised salt) and the very nature of hyperthyroidism with its remissions and exacerbations and cumulative toxicity, cause the test to be but a pointer at the best, and at the worse, a completely misleading measure. Clinical symptoms are a more reliable guide to treatment.

Further, with highly toxic patients the test may be definitely harmful, destroying the beneficial effects of medical treatment and having a mortality rate, so that clinical estimation of a patient's toxicity should include estimation of her ability to withstand recording of basal metabolism.

References

1. Bayley, R. H. Thyroid Crisis. *S. G.* & *O.* 59: 41, 1934.
2. Crile G. (Jr.) The Treatment of Severe Hyperthyroidism nd the Bad Risk Patient. *S. G.* & *O.* 67: 661, 1938.
3. Crile G. Pitfalls in Surgery. Problems in the Surgery of the Thyroid Gland. *S. G.* & *O.* 67: 363, 1938.
4. Dinsmore, R. S. and Creil G. (Jr.) Thyroid Problems. *S. Clin. N. Am.* Aug. 1935.
5. Goetsch, E. Diseases of the Thyroid *Cyclop. Med.* XII, 121.
6. Hertzler, A. E. Technique of Thyroidectomy. *Am. J. Surg.* 42: 450, Nov. 1938.
7. Jackson, A. S. Needless Thyroid Surgery. *Trans. Am. Assn. Study of Goiter*, 1937.
8. Means, J. H. *Thyroid and its Diseases.* Lippincott, 1937.

The Effect of Obstetrical Analgesics on the Infant

(H. C. Joesting, Butte, Montana, in *Jl.-Lancet*, May)

For the past 3 years we have confined ourselves to the use of a combination of nembutal, paraldehyde and nitrous oxide gas analgesia. We used the combination 4½ to 7½ grains of nembutal, from 3 to 5 drams of paraldehyde, and nitrous oxide gas. We had a somewhat lower analgesic effect, but this lower dosage almost completely eliminated the requirement of any resuscitation of the infant. In this series of 188 cases, 74% experienced complete amnesia, 21% partial amnesia and 5% were failures. Of 188 babies, 181 cried immediately and required no resuscitation. 5 (2.3%) required mild resuscitation. The only resuscitation used in these infants was gentle slapping, and 10% carbon dioxide and 90% oxygen gas. In these 5 babies, the cord was around the neck twice, and I believe that the cord about the neck was the cause of the trouble.

One case required considerable resuscitation. The labor lasted 20 hours with extreme molding of the head; no instruments were used. When it was seen that the labor was going to be difficult, additional doses of nembutal and paraldehyde were stopped and the mother was fully conscious at the time of delivery. This child was apathetic the first 4 or 5 days and had several convulsive seizures. The child nursed very poorly the first week. He was put in an incubator, and oxygen was administered continuously. Subcutaneous fluids were given repeatedly. The convulsions stopped on the 5th day. This child is quite bright: he sat up of his own accord at 7 months, was able to stand at 11 months, and could talk sufficiently well at 13 months to make short sentences. The child at this writing is 15 months old and has been entirely free of convulsive seizures.

One baby in our series was stillborn. The mother was 2 weeks past the expected date of confinement and x-ray examination revealed a large head whch was out of proportion to the pelvis. We had advised cesarean section, but this was refused. The mother was in labor for 5 hours with very hard pains. The head was extremely molded. No instruments were used.

Our infants' weight gain slightly above the average. Time at which our children first recognized their mother and reached for an object well within the normal limits.

Anti-diphtheritic and Anti-streptococcic Serums

(C. C. Fite, New York, in *N. C. Med. Jl., Jan.*, 1-8-9-7)

As to the nature of anti-diphtheritic serum, the theory is a simple one. The diphtheritic germ, the Klebs-Loeffler bacillus, finds lodgment in the throat or elsewhere. It begins to grow and multiply, a membrane is formed, a poison is secreted and absorbed. This toxin overwhelms the life centers, paralysis and death may follow. Nature has in the meantime been endeavoring to overcome the danger that is threatening the patient, and has secreted an anti-toxin to destroy the toxin.

The educational results of the germ theory have produced a long list of careful thinkers, and with that deep eye, the microscope, and by the aid of vivisection on animals the secret was discovered, and now all over the civilized world, are laboratories for the production of the precious fluid.

It is of the utmost importance to use the serum as early as possible and in full and repeated doses.

Anti-streptococcic serum I am firmly convinced is indicated in all cases where the microscope shows the streptococcus and we almost invariably find it in cases which do not yield to the anti-diptheritic serum and where we see a zone of inflammatory action extending beyond the area occupied by the true diphtheritic membrane. Therefore, if a case does not yield promptly to the anti-diphtheritic serum, we should, I believe, use the anti-streptococcic serum without waiting for the report from the bacteriologist.

In general the streptococcus like a number of other germs, does not readily give off its toxin to the surrounding liquid. If you want to get the toxic properties of the germ, you must take its own protoplasm. On this account we are compelled to use the germs themselves, in order to successfully immunize an animal.

Surgical Observations

A Column Conducted by
THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

THE BLOOD CHANGES IN THE LEUKEMIAS

A vast number of abnormal findings in the cells of the blood stream have been described as associated with certain clinical entities. Among the more important of the disease conditions with characteristic blood pictures are the leukemias.

Our present concept of the leukemias places them among the pathological conditions associated with a hyperplasia of the lymphoblastic tissue; no longer do we consider the blood as the seat of the primary morbid process. The disorders included under the term, leukemia (white blood), probably differ as widely in etiology as they do in symptoms and blood pictures. Many conditions rare to the casual worker who does not look closely are rather commonly observed by one thorough in his investigative procedures and on the alert to all the possibilities. More mistakes are made by not seeing than by not knowing. With this in view we would like to consider the leukemias and attempt to point out some ways in which the diagnoses may be made earlier.

A chronic excess of white blood cells of such degree as to justify the label, leukemia, occurs on the average of about one case in every thousand hospital admissions. The etiology is obscure and with the classification that we now follow we may find in time that the etiology is as various as the symptoms and blood picture.

Because of the obscurity and the variety of the symptoms the diagnosis is often not made until an advanced stage of the disease has been reached.

This should impress everyone with the importance of a careful examination of every patient, especially the blood count. Clinical symptoms are not sufficiently characteristic to make the diagnosis.

In dealing with the different classifications only the most common and the ones that can be established by certain well known laboratory procedures will be attempted. We would like to discuss briefly the following classifications and to mention some of the unusual forms and related conditions:

1. Chronic myeloblastic leukemia
2. Chronic lymphoblastic leukemia
3. Acute leukemia
   a. Myeloblastic
   b. Lymphoblastic

1. Chronic myeloblastic leukemia is most frequent between the ages of 25 and 40, is twice as common in males as in females, and is rare in children. The onset is usually insidious. The patient usually first complains of the discomfort arising from the enlarged spleen or of the symptoms commonly resulting from anemia. Hemorrhage from the nose and bowel, petechial hemorrhages and purpura belong to the late stages of this disease. The basal metabolic rate is often found to be from 45 to 50% above normal. The splenic enlargement is usually enormous; often the organ extends to the pelvic brim. Any of the mentioned symptoms should lead to a complete laboratory investigation of the blood.

The microscopic blood picture is the most interesting and diagnostic feature of the disease. Hemoglobin estimations and red blood cell counts very soon fall to low levels and white counts may rise to several hundred thousand or above a million. In no other disease is such an extremely high white count found, but the diagnosis may be made when the count is much lower. The predominating cells belong to the granulocytes. These cells show all stages of maturity but the majority are myeloblasts. A definite increase of eosinophilic leukocytes helps to differentiate the chronic forms from the more extreme degree of leukocytosis. The platelet count is as a rule very high and may reach an extreme height. Remissions occur spontaneously and following treatment. Spontaneous remissions are most common after infections such as pneumonia or erysipelas and these usually occur in the early stages of the disease. The count may drop to normal or subnormal levels as the terminal stage is reached, but the differential blood smears become more abnormal as the disease progresses. The disease terminates fatally, on the average, within 18 months to 3½ years of its detection.

2. Chronic lymphatic leukemia is also twice as common in males as females but the disease usually comes at a later stage in life—between 45 and 65 years of age. The clinical manifestations so closely resemble those of myeloblastic leukemia that the diagnosis can be made only by study of the blood smears. The splenic enlargement is usually less and the glandular enlargement more pronounced. The total white count usually falls between 75,000 and 100,000. Differential counting shows lymphocytes that are in keeping with those found in normal blood smears except they are a little smaller and contain less cytoplasm. The percentage of lymphocytes is often from 90 to 95%. Anemia may be present early but in the majority of cases it is a pronounced symptom late in the disease. The white cell count usually remains high until the terminal stage is reached but may return to normal before the fatal termination. The disease usually terminates after two to three years.

The term, leukemia, is applied to both chronic and acute forms, but there are many reasons for

believing that the two groups are unrelated. The differentiation between the myeloblastic and lymphoblastic types are so pronounced in chronic leukemias that they can be made by simple laboratory procedures in the majority of cases, but in the acute forms the diagnosis usually depends upon the result of oxydase staining.

3a. Acute myeloblastic leukemia is twice as common in males as females and frequently occurs in individuals less than 20 years of age. The disease is often acute at onset and in many cases resembles a fulminating inflammatory process. There is marked tendency to hemorrhage from the gums, nose and stomach, and in the fundus of the eye. Purpura is rarely absent. The lymphatic enlargement of the cervical nodes may occur so rapidly as to cause them to be dissected out under the mistaken idea that the condition is local and inflammatory. The disease usually ends fatally in a few days to a few weeks.

Most of the difficulties in diagnosis disappear after the blood smears have been examined. A large number of abnormal cells are usually found and their type can usually be determined by the oxydase stain. At times the myeloblasts are too immature to give positive oxydase reaction. Anemia often develops rapidly and may lead to confusion in diagnosis when the increase of the white cells is not to an extreme degree. The differential count often gives 80 to 90% myeloblasts. The myeloblastic type is not often confused with infectious mononucleosis.

3b. At one time all the acute leukemias were thought to be of the lymphoblastic type, but with the advent of the oxydase stain it was found that the myeloblastic is much more common than the lymphoblastic. The gross lesions of acute lymphoblastic leukemia are only slightly different from the chronic lymphoblastic type. The white cells may be increased to no more than 10,000 or to 300,000 and beyond. Great variation in the number of white cells from day to day is quite common. The differential count shows a large number of lymphoblasts—90-95% of all white cells. Anemia is a prominent symptom. The platelet count is always reduced and has been reported as low as 12 to 14 thousand.

The most important differential diagnosis is that between acute lymphoblastic leukemia and infectious mononucleosis. In infectious mononucleosis the total white cell count is seldom over 30,000, seldom is there an associated anemia, the lymphocytic forms are more mature, the platelets usually are not reduced, and the Paul Bunnell reaction is positive.

In many failure to recognize the nature of the case in hand is owing to neglecting to make a sufficient number of blood cell counts. If the observer takes into careful consideration the clinical findings and observes the blood cell count over a period of days, the cases that present diagnostic difficulties will be solved.

The treatment for leukemia has been remains discouraging. As yet, we have no satisfactory means of combatting the disease. The use of x-rays and arsenicals brings about a reduction in the blood count in most cases but the relief is only temporary. In the acute forms we can hope only to give symptomatic relief.

ERYSIPELAS IN INFANTS

(THAYER WILLIS in *Yale Jl., of Biology and Med.*, via *Current Med. Dig.*, May)

Erysipelas mortality in infants less than one month of of age, according to many authors, ranges between 50 and 100%; in those from 1 to 2 months of age from 40 to 74%. Quite in contrast to these figures are the results obtained by the present author in 6 cases of erysipelas in infants less than 2 months of age. All were treated with sulfanilamide. Five of the 6 were admitted with positive blood cultures, the disease fulminating. The other scarcely less ill was convalescing from lobar pneumonia, but her blood stream was sterile. Doses of from 0.15 to 0.29 gram per kilogram per day of sulfanilamide initially by hypodermoclysis, later by mouth. Purposefully, the 5th case, a Mongolian idiot, was given the smallest dose then believed adequate for a cure. She did very well, although the illness was slightly protracted. No serum was given to any patient, but transfusions were withheld only from the last 2 cases. Incision and dranage of local abscesses was done in 2 complicated cases. No other specific treatment was undertaken. Because of the difficulty of getting blood from a newborn baby with erysipelas, estimations of the blood sulfanilamide levels were made in too few instances to be of significance.

Complete blood counts were done at least every 3 days. Drops in hemoglobin, when not too rapid were combatted by transfusions without discontinuing the drug. When the white count fell or rash or fever due to the drug developed, sulfanilamide was instantly stopped. Diarrhea developed in 2 of the cases and cleared up when the drug was withdrawn.

AN IDEA FOR DOCTORS WITH POLITICAL AMBITIONS

Dr. Charles Hill and Dr. W. W. Mayo, elected to the Minnesota Legislature in 1872, practiced medicine in St. Paul as partners during their term of office.

DR. JUSTUS OHAGE, of St. Paul, performed the first cholecystectomy in this country—in the year 1886.—*Armstrong*, in *Minnesota Medicine*.

A sensible man does not brag . . . . . You shall not tell me that your commercial house, your partners, or yourself are of importance; you shall not tell me that you have learned to know men; you shall make me feel that; your saying so unsays it. You shall not enumerate your brilliant acquaintances nor tell me by their titles what books you read. I am to infer that you keep good company by your better information and manners, and so infer your reading from the wealth and accuracy of your conversation.—*Ralph Waldo Emerson.*

Clinic

Conducted By
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North Carolina

ON Sept. 20th, 1927, a 65-year-old college professor complained of awkwardness in using his left hand and leg. He stated that two months previously he developed a peculiar zone-like paresthesia in the region of his waist. Just before this he had got a foreign body in his eye, and thought this might have something to do with it. The third morning after the peculiar paresthesia, he developed an eruption on his legs diagnosed as herpes zoster, but never had any eruption on the trunk where the paresthetic area was. No pain was associated with the eruption except where the edge of a shoe would rub a lesion. This eruption has cleared up very slowly, and traces of it still remain. About three weeks before consulting me he rode a long distance in a car in a palm beach suit, in the Adirondack Mountains, though there was snow on the ground. His left side got chilled, and he thought this slowed up the circulation on that side. Then he tried to crank an 8-cylinder car and overtaxed himself. The next day he developed difficulty in breathing. This lasted only half a day. During this period of dyspnea his blood pressure was 85/35, he said. The next day he went to a hospital in Utica, N. Y., where he stayed six days At the time he got his left side chilled, he had difficulty in walking and got ataxic, rather than dizzy. This ataxia improved rapidly. Eight days before consulting me he had been examined by Dr. Gilbert Horrax of Boston, who told him he had a thrombus in the left side of his cerebellum. He was much better when he came to me, though he was improving more slowly than he did immediately after the onset of his trouble. Extensive laboratory studies in Utica were negative.

Physical examination showed a very slightly ataxic gait. No Romberg now, though he says he did sway a great deal just after the onset of his trouble. His neck showed a scar on the right side due to lancing some infected glands at the age of 14. Cranial nerves normal. Sensation was found normal in Boston, so I did not test it. The left pateller reflex was slightly decreased. There was possibly slight increase of the left biceps reflex. He said he had slight ptosis of the left eyelid and weakness of the left side of the face in Boston, but this had cleared up. There was some incoördination in left finger-to-nose test, and definite left-sided adiadokokinesis, but no astereognosis. For four or five nights after the onset of his trouble had clonic spasms of his left leg on going off to sleep, but these had cleared up. T. 97.6 P. 68 R. 18 B.P. 128/80

Diagnosis Thrombosis in left side of cerebellum. Herpes zoster.

On Dec. 10th, nearly three months later, his ataxia had disappeared entirely. His left knee-jerk was somewhat more active than his right, though it had been diminished previously. There was still slight incoördination in the left finger-to-nose test. The adiadokokinesis was clearing up. Improvement was marked, and eventually he went on to complete recovery.

On December 2nd, 1935, a 60-yr.-old furniture sander complained of constant soreness in his chest at about the apex of his heart. He said he had quit work on account of bad health two years ago, and had worked only about half time for a year before that for the same reason, his trouble being this same soreness in his chest. The pain was always there, but varied somewhat in intensity. At times it had been severe enough to confine him to bed. He had had some chest cough for years, but had not lost much weight, and had no night sweats. There was some white sputum. The character of his cough, as noted while taking his history, suggested a pleural reflex cough. At times shortness of breath had incapacitated him. He said his ankles would swell a little occasionally. He had no headache, but there was some aching under his left shoulder. There were no urinary symptoms. He had never vomited blood, but said he had had bleeding piles. He said he had had some recent where he could not see them bronchoscopically or 3 quarts of blood in one fit of coughing 2 years before. His past history was unimportant. About 3 to 6 mos. after the onset of his present trouble, he was studied clinically and roentgenologically, and also bronchoscopically at the Guilford County Sanatorium for Tuberculosis. No evidence of tuberculosis was found, definite emphysema was present, and the diaphragm was adherent to the lateral chest wall. This would seem to explain the pain in his chest, but not the hemorrhages. Bronchoscopy showed three or four hemorrhagic areaso n the left wall of the trachea, and one on the wall of right bronchus. Dr. M. D. Bonner thought that these might explain part of his hemorrhages and further hemorrhagic areas down in the smaller bronchi

where he could not see them bronchoscopically might be enough to explain the entire clinical picture. There was nothing to suggest pneumoconiosis in the x-ray picture. His Wassermann was negative. There was nothing else of special interest in his history, except that one physician had suggested the possibility of pneumoconiosis, and this seemed to make a great impression on him. I got the idea

that he would go from one doctor to another in the hope of proving its presence and thus making an industrial case out of his trouble.

Physical Examination: Ht. 5 ft. 4½ in. Wt. 140¼ lbs. (Standard wt. 146.) and had no plates. During the examination he would have *intermittent* attacks of coarse tremor of his forearms and hands and said he had spells of inability to walk without holding on to something—he would get dizzy. With his shaking spells his head, body, legs, and even the soles of his feet would tingle. Said his left eye was usually stuck shut on waking in the morning. Eyegrounds looked normal. Neck negative. The left side of his chest was larger than the right though he was right-handed. This might be due to diaphragmatic adhesions making his left chest work harder in breathing. At his work he used both arms and pectoral muscles about equally. Lungs showed nothing but emphysema. Abdomen negative—no enlargement or shrinkage of liver found. He was somewhat tender over his left kidney and had a moderate hydrocele on both sides which transilluminated well. There were some varicose veins in his legs. He had a definite Romberg and showed occasional unsteadiness in his gait. His knee-jerks were normal. There was marked incoördination in the left finger-to-nose test, the right being normal. This was checked repeatedly and was constant. Right-heel-to-left-knee test was performed perfectly, but left-heel-to-right-knee showed complete inability to find his knee. Stereognosis good on both sides, on adiadokokinesis. His urine was negative.

Diagnosis:From Dr. Bonner's findings, old diaphragmatic pleurisy with adhesions on left side, emphysema, old ulcerative tracheobronchitis. The neurologic findings suggest a thrombosis in his brain, possibly cerebellar.

About 2½ yrs. later he reported still having spells of shaking and staggering. At Duke they had found nothing to suggest a brain tumor. He was given hyoscine and potassium iodide, but I have not had any further knowledge of his case.

MEDICAL MANAGEMENT OF CHRONIC PROSTATITIS

(H. L. Kretschmer, Chicago, in *Wisc. Med. Jl.*, May)

The prostate gland is often a focus of infection in arthritis, iritis, neuritis, myalgia etc.

Many are of the opinion that chronic prostatitis is due to gonorrheal urethritis. In a study of 1,000 cases of chronic prostatitis, gonococci were found only 24 times.

Symptoms may be so typical and characteristic of prostatitis that attention goes direct to the prostate, or there may be nothing suggestive of chronic prostatitis.

The diagnosis is based on the results of the rectal examination and on the microscopic examination of the prostatic strippings.

The expressed fluid should be examined at once. The

(To Page 290)

DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

PSYCHIATRIC PROGRESS

UNLESS it were the assistant physician, no other medical man in American life has spent his days so withdrawn from daily contact with the busy world as the superintendent of a state hospital. For many years he was known as the superintendent of the lunatic asylum. He was that strange man who elected to spend his days and his nights, too, behind the high brick wall, and to live in the very asylum building with the crazy patients. Many people did not feel inclined to make an intimate of such a queer man; and few people, to be sure, cared to visit a lunatic asylum. It was a world apart from normal life, and one of the chief duties of the superintendent and of his fellow-workers was to keep the patients within the wall and within the buildings. People were afraid of insane folks; they had been visited by some evil spirit or they had been made to feel the displeasure of Divine wrath.

Upon the superintendent of the asylum the law placed the responsibility of keeping such folks in constant custody, where they could not alarm and make sore afraid those who thought themselves to be sound in psyche and unimpaired in memory. And so, for many, many years after the beginning of our national life, the keepers of our lunatics were the superintendents of our insane asylums.

The superintendent not only lived apart from his fellow-mortals, but his work-hours were as long as the day and the night, and he had many things to do and many in his employ to help or to hinder him in doing them. But life in an asylum, though strange, was neither alluring nor enriching, and the superintendent was obliged to take such medical and such lay help as came to him. There were no training schools for nurses in those early days, and not infrequently asylum physicians had to nurse as well as to medicate. Many asylums were located remote from cities, not infrequently far in the country, where access to consultation and to medical facilities was not possible. The law not only made the superintendent the head of the medical service of the institution; it held him responsible also for all the farming operations, for the care of the live stock; he was the custodian of all the buildings; he was the resident engineer; he was chief of the personnel; he was head nurse and also head attendant. The superintendent was

supposed to be sufficiently gifted in political diplomacy to enable him to obtain from the biennial sessions of the legislature an appropriation equal to his institution's recurrent needs. He was held responsible for all expenditures, yet few physicians had had instruction in accounting.

In 1894, the semi-centennial meeting of the American Medico-Psychological Association was held in Philadelphia. The association is now known as the American Psychiatric Association. In its earliest days it was known as the Association of Superintendents of Lunatic Asylums. The association, now within a few years of a century in age, is one of the oldest American medical organizations. Perhaps the semi-centennial meeting was held in Philadelphia because Dr. Benjamin Rush is the patron-saint of the organization. Dr. S. Weir Mitchell reluctantly accepted the invitation to deliver the annual address to the meeting in Philadelphia in 1894. As he did so he looked over his spectacles and down along his aristocratic nose upon the assembled head-keepers of the nation's lunatics. He spoke superciliously and chidingly to them, telling them that they were neither physicians nor psychiatrists; but farmers, gardeners, carpenters, keepers of the insane—not scientists and not even psychologists. Dr. Mitchell assumed that he, a neurologist, was also a psychiatrist. Many neurologists continue to make that assumption. Dr. Mitchell had a large, lucrative private practice in Philadelphia—the medical center of the United States. Many a superintendent who was listening to him was located in the remote country and living upon an annual salary probably not equal to a single fee of Dr. Mitchell. Dr. Mitchell had already become distinguished as a physician and as an author—in medicine, in history, in fiction. His reputation in literature survives him. Yet, in that assemblage of keepers of the insane addressed by him were many thoroughly educated superintendents who were able to write about their difficult specialty with a degree of clarity and appeal and with a touch of literary gift that those of us who take up our pens envy to this day. I wish that all young physicians, especially, would go carefully through the volume that sets forth the transactions of that meeting in Philadelphia. Many of the papers are quite the equal of Dr. Mitchell's address.

Yet, it is true that practically all the hospitalized mentally sick in the United States are cared for by the various state hospitals. It is probably true, too, that most of the progress that has been made in psychiatry has had its origin in state hospitals. In other words, most of the mentally sick folks in our country are under the medical care of the staffs of state hospitals. If psychotic patients are to be cared for better it will be necessary to improve the service of the state hospitals. If psychiatry as a medical specialty has not kept pace with progress in other medical fields it must mean that the medical work in the state hospitals has not been what it should be. If the understanding of so-called mental disease is to become deeper and clearer, one is obliged to believe that such clarifying work will have to be carried on in state hospitals. But, the superintendent of a state hospital cannot look after his administrative duties and exercise leadership at the same time in scientific psychiatric activity. A state hospital with a patient-population of three thousand is not unusual. A hospital of such size should have a medical staff of at least twelve members. The work of a staff of such size should be directed, unified and inspired. Such a coördinator should be the medical director of the institution. With some experience in administration and with sound training in scientific medicine and in psychiatry, and with some gift in teaching, such a medical director would transform a state hospital into a medical school. In such a transformed state hospital the condition of each patient would constitute a problem in research, and the medical staff would become eager to tackle such a problem. The superintendent would feel relieved by knowing that such thorough work was being carried on while he was left free to care for his administrative responsibilities.

In two of the state hospitals in Virginia clinical directorships have been established. Dr. James Brooke Pettis entered a few months ago upon his duties as clinical director of the Western State Hospital at Staunton. Immediately upon graduation from the Medical College of Virginia several years ago he entered upon an interneship at St. Elizabeth's Hospital in Washington, and he has steadily continued his psychiatric education. Dr. Pettis brings to the more than a century-old institution at Staunton the latest thought in psychiatric medicine. On June 1st, Dr. Joseph E. Barrett became director of clinical psychiatry of the Southwestern State Hospital at Marion. Dr. Barrett is a native of Arkansas, a graduate in medicine from the University of Tennessee. He has spent fruitful years in psychiatry—twice as a member of the medical staff of the State Hospital at Little Rock; he has been assistant physician of the State Hospital at Taunton, Massachusetts, and he has been assistant commissioner of mental disease of Massachusetts. He has been also director of the state hospital commission of Michigan. Last year he made a survey of the state hospitals of Virginia. We may confidently expect the state hospitals at Staunton and at Marion to become postgraduate institutions. All state hospitals so organized, and so equipped as to make possible the in-

vestigation of the patient's physical structure as well as the patient's attributes, will attract to the medical staffs alert and enthusiastic young physicians. In no other domain of medicine are well-trained workers so badly needed as in the field of psychiatry—both in institutions and outside of them. And to state hospitals so organized practising physicians should be encouraged to come for post-graduate instruction afforded by clinics. And, ultimately, every state hospital so organized should reach its helpful hands out into the community through clinics, to which all citizens, who are finding some of life's problems intolerable could come for help.

The superintendent of the state hospital will not allow himself to be perturbed by the uneasy thought that the clinical director will be interested in displacing him. The director will afford the superintendent long-needed assistance. The director and the superintendent will be joint labourers.

I know I am justified in the statement that no other officials in the life of the various states have done more for the welfare of the citizenship of the states than the superintendents of the state hospitals. They have given their nights as well as their days to the care of their patients; they have generally done their work quietly, faithfully, undramatically. No other carer for the sick has given the sick so much in service for so small an outlay from the public treasury. The superintendents of the state hospitals are the stout friends to those most in need of friendship, sympathetic physicians to those whose conditions are most difficult to diagnosticate and to treat. He who derides the superintendents of our state hospitals is merely publicising his own ignorance.

INTERNAL MEDICINE

PAUL H. RINGER, A.B., M.D., F.A.C.S., *Editor*
Asheville, N. C.

DR. SLEYSTER'S PRESIDENTIAL ADDRESS

WHEN a man attains the highest rank possible in organized medicine in the United States; namely, the presidency of the American Medical Association, he is bound to be an enthusiast along the lines of scientific, as well as organized, medicine; and in his presidential address it can be conceded that he is giving the best that is in him. The editor does not know whether, in his address entitled: "The Mind of Man and His Security," Dr. Rock Sleyster, of Wauwatosa, Wisconsin, reached the greatest heights of which he was capable, but he does know that his address is very good indeed and well worth reading and re-reading.

Dr. Sleyster points with pride to the life-expectancy, which has risen in the past few years from 40 to 62 years. Despite the tremendous advances in prevention and treatment of many diseases, mental defects and mental disease continue to present an increasingly significant problem. Patients with mental disease occupy 47 per cent of the hospital beds in this country; and for the country as a whole, the number of persons hospitalized for mental disease increased more than 40 per cent from 1926 to 1936. Nearly 1 per cent of all the people in this country—in round figures, 1,300,000—are incapacitated by epilepsy, feeblemindedness and various types of mental illness. The cost of caring for these people is roughly $250,000,000; and it has been estimated that loss of earnings of hospitalized mental patients, plus the cost of maintenance, represents an economic loss in this country of $783,586,000 annually.

Dr. Sleyster mentions various nervous and mental diseases which claim particular attention, among these being epilepsy, which, despite unceasing research refuses to open its doors to any curative measure. The spastic child, who, as a result of injury at birth or from other cause, develops disability associated with motion of the body and sometimes deterioration of the mental processes is another appealing problem. For many of them permanent care, either at home or in an institution, is the only solution. The best of obstetrical work is necessary to prevent as far as possible birth injuries; and once the handicap is recognized, the pediatrist, the orthopedist, the child psychologist and the psychiatrist must work together in order to give the child every possible aid.

Dr. Sleyster points out that for the control of feeblemindedness medicine must look to the investigators in genetics and heredity for advice in limiting the production of children incapacitated from birth to meet the mental needs of modern civilization. There is evidence indicating that at least 10,000,000 people in this country bear within their bodies elements which may result occasionally in the production of a feebleminded child.

> "Most authorities are agreed that there has been no continuous increase in the number of feebleminded, of the mentally defective and of those with mental disease. Such increase as has occurred is the result of the application to these human beings, among all of us, of what modern medicine has done to decrease disease as a whole and thus to prolong life for all of us."

Dementia paralytica or paresis, is of course intimately associated with syphilis, which discovery, as Dr. Sleyster points out, was made by a Japanese of German training in an American institution—

evidence of the universality of medical science. Knowing the cause and having treatment at hand, can paresis be eliminated? Unfortunately, no, although a great diminution in the total number of cases of syphilis will bring about a corresponding diminution in the cases of paresis; but the total elimination of the disease is as yet a Utopian dream.

"Complete elimination of this or of any other disease the dissemination of which depends on intercourse between human beings would require a control of the actions and of the lives of men beyond the power of even the most rigid of governments to establish. Such control would involve changes in our methods of living which are inconceivable under any civilization. Men whose minds and wills are animated temporarily by some single motivation as of religion or nation or race, or who follow blindly after strange gods or strange leaders, may sacrifice freedom of thought and freedom of speech and freedom of action to seek a special goal. But eventually the mind awakens and biology triumphs."

Dementia praecox is responsible for at least 60,000 patients in our institutions, and perhaps for another 30,000 who are in early or controlled stages of the disease and not yet hospitalized. Treatment of this important mental disease is unsatisfactory.

In the latter part of his paper Dr. Sleyster looks into the future and muses and philosophizes. He says:

"Most significant among all the aspects of our civilization is not the increase in the number of the mentally afflicted. This, like many another of the problems with which statesmen and economists concern themselves, is a reflection of just one simple fact for which the sciences of medicine and public health must take the responsibility: Human beings tend to survive, to be more healthful, to live longer than they used to. This explains the fact that more people die now from cancer instead of dying from typhoid and from cholera and from smallpox. It explains why spastic children and the feebleminded and the epileptic survive instead of being included in the figures for infant mortality. It explains why heart disease and not tuberculosis is now captain of the men of death. It explains why a people who once troubled themselves little with the problems of old age now find the accumulation of economically dependent men and women past 65 and 70 years of age wellnigh their chief concern. Man grown old is not efficient; he cannot labor with his body, and his mind is subject to loss of memory, slowness of action and occasionally queer aberrations."

In these days our world has many concerns which demand its attention; and these concerns arise, in most instances, not out of individual thinking but out of the psychology of the mass of men, whose opinions are in many instances controlled by stimuli definitely planned to obtain a certain result. In former days men were much more inclined to think for themselves than they are now.

"Today the forces that have been developed by man as a result of modern invention in the field both of materials and of thought are so intricate and so great that frequently they are far beyond the ability of the average man to grasp. Hence, bewildered, little men seek constantly for leadership without even sufficient data or background to determine whether or not that leadership is for good or for evil. The breakdown of the sense of individual responsibility is thus a menace not only to the individual but to the nation and to mankind."

Because of the unsettled conditions throughout the world and because many individuals feel that possibly our so-called civilization has failed, men seek increasingly for security and wish to be protected against the hazards of unemployment, the dependence of old age, the pain and suffering associated with sickness. This is one of the reasons why governmental agencies have taken so much more unto themselves and why their administration has become so paternalistic; and the medical profession, aware of the nature of men, must oppose increasingly those forces which tend to sap vitality, to destroy initiative and to break down individual character.

"As men become increasingly willing to turn over to their statesmen or to their governments which those statesmen represent the individual responsibilities for which men in the past have fought and died, the vitality of the nation itself must become weakened."

It becomes, therefore, necessary for physicians and for people as a whole to weigh carefully the extent to which the responsibility of the individual for his own care in old age, in disease and in unemployment is to be turned over to the nation; in other words, how great a price are we prepared to pay for this so-called security?

"If national control over illness is to bring about a breakdown in the character of our people so that they will, like many a foreign nation, be ready to yield supinely to the wills of dictators and of dictator nations, the price will have been far too great. If protection against the hazards of illness and of old age is to include an unwillingness to battle against economic forces which bring about unemploy-

ment and national destitution, making the individual citizen ready to accept governmental gratuity on every conceivable occasion, again the price to be paid is far more than the goods are worth."

Dr. Sleyster's address is thought-provoking, and in the latter part of it he crosses easily from the scientific to the economic and looks across the river to the political. Subtly, in a kindly mood and in a very gentle fashion, he states the fundamental principles upon which organized medicine in this country rests; and by implication serves notice upon the powers that be that any attempt to regiment the medical profession and to force it into a goose-step will be resisted to the last ditch.

OBSTETRICS

For this issue IVAN PROCTER, M.D., F.A.C.S.
and
KENNETH DICKINSON, M.D., Raleigh, N. C.
Department of Obstetrics and Gynecology,
Mary Elizabeth Hospital

The Anemias of Pregnancy

THE anemias of pregnancy are conveniently grouped under three classifications:

1. Physiologic anemia of pregnancy (Kuhnel)
2. Idiopathic hypochromic anemia, microcytic hypochromic anemia
3. Anemia simulating pernicious anemia, macrocytic hyperchromic anemia, primary anemia.

Physiologic Anemia of Pregnancy

The first type occurs so frequently as to be considered a normal phenomenon of pregnancy. The cause generally ascribed is increase in blood volume resulting in hydremia by which there is a fall in hemoglobin and in red blood cells. This is generally most marked in the latter months of pregnancy, when the maternal organism manifests water-retaining proclivities. (Gueissax, Wanner, Kapoth, Nasse, Lloyd-Jones, Zangemeister). This increase in water content of the blood and the consequent anemia is progressive to the seventh month after which it remains stationary or regresses (Stander).

Obviously an anemia on this basis requires no treatment since it will correct itself rather promptly after parturition. For this reason, Adair in 1936 and Watson in 1938 suggested that different standards for the pregnant woman should be determined. In this connection, the former stated that, by the standards for the non-pregnant, 63.2% of his patients had anemia, whereas, by a corrected standard, 11.6% of his patients were anemic. Plass believed that treatment was unnecessary unless the hemoglobin dropped below 70% and the red blood cells below 3,500,000, and Watson felt that the group with a hemoglobin below 60% were subject for concern and study.

Microcytic Hypochromic Anemia

This type includes the majority of the severe anemias seen in pregnancy. The number of red blood cells may be comparatively high, but the hemoglobin and the color index are ordinarily low. It is a true iron-deficiency anemia and may be due to withdrawal of iron by the fetus, improper diet, or deficient iron metabolism (Plass). Undoubtedly many of these patients were anemic before pregnancy occurred; Mussey and others found a high percentage with demonstrable foci of infection such as infected tonsils, teeth and pyelitis. He claimed that this was further proved by the blood picture which showed toxic influences, such as a neutrophilic shift to the left. It is readily seen that such an anemia occurring with an ordinary physiologic anemia of pregnancy might result in a marked reduction of hemoglobin and red blood cells.

These anemias are best treated by the administration of iron and ammonium citrate, ferrous sulphate, ferrous carbonate, et cetera. Hydrochloric acid by mouth is said to aid in the metabolism of iron. In the more severe cases transfusion is indicated. Foci of infection should be searched for and those found should be removed.

Macrocytic Hyperchromic Anemia

This rare blood disease of pregnancy may have a fatal outcome. The blood picture is often indistinguishable from that of pernicious anemia and were it not for the cases of complete cure there would be no need for giving it a separate classification. Esch and Peterson's mortality was 65%; Balfour reported a maternal mortality of 42%, with 53% of the offspring still born and an additional infant mortality a few days after birth of 15%.

The prognosis is better the earlier the disease is recognized and proper treatment instituted. Treatment is similar to that of true pernicious anemia and consists of the administration of liver, liver extract and ventriculin in massive doses. Willis observing the disease in India, reported good results in the use of yeast extract. Transfusions are extremely beneficial and occasionally interruption of pregnancy is good therapeutic judgment.

Case Reports (Summarized)

From the obstetrical department of the Mary Elizabeth Hospital, 25 cases showing no complicating factors were selected. Of these seventeen were L. O. A. in position, four were R. O. A., two were R. O. P. rotating spontaneously to the R. O. A. position, and two delivered spontaneously in the R. O. P. position. All of these cases delivered at term.

From the labor record, nineteen were judged

easy, five of moderate difficulty and one was graded difficult. Fourteen cases delivered spontaneously, although several of these had an episiotomy. Ten of the 25 were delivered with the aid of the low or outlet forceps, 113 cases received an episiotomy and one required axis-traction forceps in the mid-pelvis.

There was no accurate method of calculating the blood lost at delivery, but as the amount was estimated by the same accoucher this method seems of fair accuracy. The greatest blood loss was estimate to be 350 c.c., the least 50 c.c., the average 140 c.c.

Fifteen of the 25 received blood studies during the first trimester. Nine were studied during the fourth, fifth and sixth months; one was examined at the seventh month. The lowest initial hemoglobin was 57%, the highest 92%, the average 68%. Since all readings were taken by the same individual and with the same technique (Dare) these figures would also seem to be reasonably accurate. The same statement is also applicable to the red blood cell counts. Here the lowest initial count was 2,850.000, the highest 4,720.000, the average 3,556,000.

In all cases, the post partum hemoglobin estimations and red counts were taken within three days, 90% being completed within 24 hours of delivery. The lowest post partum hemoglobin by the same technician and technique was 48%, the highest 78%, the average 62%. Similarly the lowest red blood cell count was 2,550,000, the highest 3,940,000, the average 3,255,00.

The greatest change in hemoglobin was a fall of 30 points—a drop, in six months time, from an initial hemoglobin of 92% to a post partum hemoglobin of 62%. This occurred in a patient whose pre-natal career was described as uneventful, whose labor was graded easy, whose delivery was spontaneous and whose estimated blood loss was 100 c.c.

Blood Loss at Delivery

Unfortunately, these statistics do not give definite information as to the effect of blood loss at delivery upon the hemoglobin and red cell count of the parturient. To do this, a blood study should be performed directly before the onset of labor as well as afterwards. Because this information was not available, the cases presented were chosen because they seemed to represent, in cross section, the group of patients in whom blood loss at delivery is not excessive. The one exception, an estimate loss of 350 c.c. brings the average for these patients to 140 c.c., a figure very close to the estimated average for all normal obstetrical cases in this clinic (100 to 150 c.c.) It was hoped that by selecting a group well within this range, the effect of the bleeding at delivery would be about the same for all and would, therefore, permit a consideration of the anemias of pregnancy without a special consideration of the blood loss during labor.

If this is permissible in a statistical study, it is certainly not permissible practically. During the woman's entire prenatal course, the obstetrician must have in mind the blood loss at delivery. He must prepare for it by preventing anemia in every possible manner, and by vigorously treating any anemia that may develop or exist. This treatment may be iron, vitamins, diet, liver, or transfusions before term. In the same way, every precaution should be taken to conserve blood at delivery. This means of course: close observation for lacerations of perineum, vaginal tract or cervix, skillful management of the third stage.

Ordinarily most of the blood loss is in the third stage, the bulk of this following the separation and delivery of the placenta. Hasty and vigorous abdominal manipulation of the uterus to terminate the third stage should be avoided as should traction on the cord, manual removal et cetera. Pituitrin or some form of ergot should be routinely administered and sterile packing should be immediately available should hemorrhage be excessive and uncontrolled by the ordinary methods.

Conclusion

The majority of pregnant women will show some degree of anemia as judged by the standards for the non-pregnant. Some of this anemia is physiologic; the blood lost at delivery contributes to this. Other anemias existed before pregnancy, upon which was superimposed the so-called physiologic anemia of pregnancy. Still others are more vicious in type, simulating a true pernicious anemia; fortunately this last is rare. Determination of obscure causes of all types of anemia during pregnancy, as well as the time it may be expected to occur, is important, but unfortunately not always possible for the physician with limited laboratory and research facilities. Different standards for the pregnant woman would seem unnecessary and often confusing. Because this new standard must be lower than the present normal, it could be the cause of some false sense of security.

The more practical course would seem to be the application here of the same principle that guides in the solution of all obstetrical problems, namely; the protection of the woman's health throughout pregnancy, returning her to the non-pregnant state in the best possible condition. This is not satisfactorily accomplished unless the blood stream, as well as the generative organs, has been restored to normal.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Acute Rheumatic Fever

One of the most delightful reports on rheumatic fever ever read by this editor is that by Helen Taussig, of the Pediatric Department of the Johns Hopkins Hospital, published in the May issue of the *Journal of Pediatrics*. It is too lengthy to ad-

mit of proper abstraction in this column, but a few items from it may invite the reader to obtain this issue of the journal or a reprint and read it for himself. Some day we will think less of the disease as one attacking multiple joints and more of the resultant effects of the disease on the heart valves and muscle.

"The onset is often insidious, often only fleeting pains in the limbs especially pains that disturb sleep at night. The sedimentation rate is very valuable as a diagnostic aid, not specific for rheumatic fever, but a sign of infection. Salicylates seem to revert the sedimentation rate toward normal. The sedimentation rate is in direct proportion to the severity of the infection. Salicylates are also of diagnostic value, since joint pains which subside under salicylates are often due to rheumatic fever. The dose must be adequate, 10 grains per 10 pounds of body weight divided over 24 hours is advocated. When over 30 grains per day are given they should be combined with an alkali. The rationale of the use of an additional alkali is not known. Aspirin with magnesium oxide is of real therapeutic value. Magnesium carbonate is the form best tolerated given in doses equal to the amount of salicylate prescribed. The salycilate effect lasts for as long as ten days after it has been withdrawn and a word of caution is given to keep the patient in bed for at least two weeks after the drug has been discontinued.

"Abdominal pain is a frequently overlooked sign of the disease. It is usually not associated with nausea, vomiting diarrhea or constipation. It may closely simulate acute appendicitis. Rheumatic abdominal pain is relieved by salicylates. Precordial pain may be an early symptom and is relieved by salicylates. Fever may be around 100° but is often higher. There is no evidence that salicylates prevent carditis. The heart must be carefully watched in rheumatic fever.

"There are some who believe that every case of rheumatic fever eventually becomes a cardiac problem. There are others who feel this is not the case and that some patients recover without heart damage. In some instances the carditis appears early and in others the damage to the heart is not discovered until years later. Use the electrocardiogram to assist in the clinical examination. Mitral murmur is the most frequent sign of heart involvement in rheumatic disease, the lesion being a mitral insufficiency. It is usually evidence of myocardial damage rather than valvular disease, a result of dilatation. It does not mean a hopeless prognosis. If such a murmur develops as the child is allowed up it indicates that the rheumatic process is still active and additional bed rest is indicated. Mitral stenosis takes time to develop six months being the shortest time in which it develops. Mitral stenosis once established lasts throughout life. Signs of mitral stenosis developing before the tenth year of life may be assumed to be the result of rheumatic fever. It is important to keep the patient in bed until all signs of activity of the disease have subsided. Aortic insufficiency does appear in childhood as a result of rheumatic fever. It carries with it a very serious prognosis unless absolute bed rest is enforced. Marked cardiac arrhythmias, severe dyspnea (true orthopnea), marked cardiac enlargement and pericarditis all suggest a serious outlook for the patient.

"When shall the afflicted child be allowed up? The answer is—*not until after the subsidence of the active rheumatic infection,* be this weeks, or months or years. No great mistake will be made if acute rheumatic fever is considered in the same terms as tuberculosis. It may require years to overcome a severe infection. The child should be kept in bed until all laboratory and clinical evidences of an acute infection have disappeared. The child must be allowed up very gradually to avoid even the least cardia strain. Use the chair for a few hours, then standing, then walking short distances about the room, gradually in two weeks durations increase his liberty. It requires several months of getting up to be certain that the heart can stand the strain. Overfatigue lowers resistance. All this time the heart to be carefully watched."

This splendid treatise on rheumatic fever improves with each reading. The well-informed parents seem to be willing to coöperate in keeping the child in bed, but others seem not to understand why the physician is keeping the child in bed except to keep a patient and make additional calls. These parents are hard to handle, for if you stress the heart problem too strenuously, they make cardiac invalids of their children for the rest of their lives. Handling such parents is a real test of the physician's understanding of human nature.

UROLOGY

For this issue SAMUEL H. JUSTA, M.D., Rocky Mount, N.C.

VERUMONTANITIS

PRICE wrote recently of this affection: "The writer was prompted to select this subject because of the great number of men who are afflicted with verumontanitis causing conditions varying from premature ejaculations and nocturnal emissions on to a multitude of conditions, affecting the person's health, conduct, morals and ability to perform normal duties in business, and leading to marital discord. In the young man it brings about vacillation in purpose, inability to apply himself mentally or

physically and to assume his normal place in life. In the middle-aged man the effects in some instances are sufficient to disturb the family and business life. This condition is easily recognized and easily treated. I know if no condition which responds so promptly as does this."

The verumontanus or colliculus, a small elevation in the prostatic urethra is approximately 9 mm. long 3 mm. wide and extends 3 mm. above the urethral floor with the ejaculatory ducts discharging along the base on both sides. It may be plainly seen through a urethroscope. It consists mostly of blood-vessels, lymphatics and nerve endings, is pyramidal in shape with a central lumen ending in a complicated system of invaginations. It is a remnant of the fused mullerian ducts of the embryo, and its function, mostly in sexual activities, is analogous to that of the clitoris in the female. Normally it is a gland of numerous short racemose tubules, similar to those in the prostate gland and these twisted passages as well as the central lumen, called the sinus pocularis or uterus masculinus, form a suitable focus for retention products and constitute one reason for the difficulty in eradicating infection and serve to keep up a chronic posterior urethritis.

The verumontanum is an accessory sex organ, acting during ejaculations as a dam to the prostatic urethra. During sexual excitement it becomes greatly congested. This congestion may become chronic if continued by ungratified sexual excitement, masturbation, withdrawal and the use of irritating drugs in the urethra. The verumontanum becomes inflamed in the course of a chronic gonorrheal or other infection, or from persistent treatment with silver nitrate. Such inflammation may lead to closure of the ejaculatory ducts or stricture of the prostatic urethra.

The condition may be acute or chronic. The general symptoms are those of sexual neurasthenia. Pain, mild or severe, is often noted in the region of the verumontanum. Most important and most frequent are the referred pains from the verumontaaum and prostate, as pain in the small of the back, over the sacroiliac synchrondrosis, down the legs, suprapubic, perineal and sacral: in the urethra, groins and testicles. At times the pain simulates renal colic, and various rectal sensations and herpes progenitalis. Headaches, dizziness, vertigo, weakness and a state of chronic nervous exhaustion and digestive disturbances may be added features. Frequently there are increased frequency, urgency and burning during urination; slow, feeble urination, hematuria and urethral discharge. Quite important are impotence, premature or painful ejaculations, nocturnal emissions, sterility and numerous neurotic symptoms. As Moseley aptly expressed it, "If the patient has general symptoms of verumontanitis, he is quite unhappy."

Ballenger emphasizes the importance of obtaining the patient's confidence by tactful and leading questions and eliciting the degree of sexual weakness. Many patients think that premature emissions are temperamental characteristics and have no idea that most of the time they are caused by definite lesions of the verumontanum or surrounding structures. A small and anemic, or large and flabby penis should suggest the possibility of sexual weakness, regardless of the patient's statement. Many with such weakness, without discernible pathology, obtain fine results from treatment for hyperesthesia or congestion of the verumontanum.

The treatment depends upon the associated conditions. Perform a meatotomy if a number 24 F. bulb will not enter the urethra. Dilate strictures sufficiently to permit easy instrumentation. If the posterior urethra and verumontanum are congested and give the impression of being boggy, it is better to instil ½ to 1% nitrate of silver solution, before making local applications of a stronger solution. As soon as the very acute congestion has subsided, the stronger solutions have the effect of making the verumontanum and posterior urethra much less susceptible to stimulation. The usually associated tender congested prostate and seminal vesicles are treated by very gentle massage. Use no high-frequency current, cutting or fulgurating, except to destroy neoplasms.

The prognosis of impotence is general is good under the age of 45 years, usually poor after the age of 50.

Four cases are presented to serve as illustrations:

Case 1.—A white, unmarried millworker, aged 35, complained of morning drop, weak penile erections, sacral pain and apprehension over his condition. He wanted to get married but was afraid to do so. He told of contracting gonorrhea three years previously and being pronounced well four months later; but eight months after he was pronounced well he began to have a crawling sensation in the perineum and a morning drop several times a week. He was treated by another physician by prostatic massage for a year with no relief. Another year elapsed without treatment and then he mas referred to my office. The positive findings were a few shreds in both glasses of urine, a urethral meatus that would admit no bougie larger than a number 22 F. and a boggy prostate whose expressed secretion contained 10 to 20 pus cells per high-power field. A meatotomy was done first and his morning drop practicall ceased. Two weeks later investigation with bulbous bougies detected no strictures, yet no larger than a number 26 F. sound could pass through the posterior urethra.

Through the urethroscope was revealed a very hypertrophied and congested verumontanum nearly filling the urethra. No strictures were noted. Biweekly instillations of ½% solution of nitrate of silver for two weeks, then 1% solution for two more weeks, followed by two topical applications of 20% solution 10 days apart, and two of 50% solution 10 days apart shrunk up the verumontanum nicely. For another month he was given permanganate

irrigations and sounds up to 30 F, passed easily. The patient was seen seven months later and found quite happy. He stated that he had regained nearly all of his sexual vigor and the 10 pounds he had lost, and that he had no symptoms. However, his prostate was still enlarged and boggy but the smear was normal.

Case 2.—A white farmer, aged 24, married three years, complained of frequency and urgency of urination every 30 to 60 minutes. He had a morning drop for a day or two after wife ended menstruating and at no other time, was quite nervous at times and could not sit in a theatre play bridge, or attend to business duties as he should. Occasionally a pain radiated from his pelvis along the course of the right sciatic nerve. His wife possessed more sexual power than he and this worried him. Past history showed no disease of the genitourinary system, but he did have achlorhydria and occasional pylorospasm. Also he confessed to withdrawal upon intercourse.

He was a normal-looking male presenting only a slightly congested posterior urethra a hypertrophied and congested verumontanum and a slight boggy enlargement of the right posterior lobe of the prostate.

At 10-day intervals the verumontanum was painted with 50% silver nitrate solution. His symptoms disappeared after the second treatment and the verumontanum was much smaller and of a pale color after the fourth. His wife became more contented too, especially after fitting her out with vaginal diaphragms and jelly.

Case 3.—A white merchant, aged 39, marred nine years, complained of a sensation in the perineum like something is about to come out of his penis, but when he looks, he never finds it. This had lasted two months this time. He has had two other attacks, one three and the other seven years before. It worries him all the time, and he can not attend to his duties or keep his mind on his business. He had no pan nor urethral discharge but has frequency of urination from nervousness. Penile erecton is slow and sexual desire is nearly always lacking. Quite often he has gaseous abdominal distention and mild epigastric pain. When younger he was promiscuous sexually; however, he had no veneral or other diseases.

A worried, nervous, moody man, general findings essentially negative, except that on urethroscopic examination the prostatic urethra was a little congested and the verumontanum enlarged and congested, but not acutely so. Rectal palpation showed a slight boggy enlargement of the right lobe of the prostate. Four weeks of dilatation with sounds up to 30 F. and intravesical irrigations followed by posterior instillations of 1% silver nitrate solution for another month gave only a little relief. Six applications of 50% solution of silver nitrate practically reversed the original picture.

Case 4.—A white farmer, single, aged 22, complained of bedwetting since childhood and no other symptoms except the fear of failure to enlist in the navy because of this symptom. Past history shows no veneral or other diseases, except the usual childhood diseases. However, he admits frequent masturbation. Physical, blood and urine examinations were normal, except for a hypertrophied and congested verumontanum. Four applications of 50% silver cured his bedwetting and markedly lessened his desire to masturbate.

Conclusions

1. In many cases impotence is not functional and the failure to relieve certain obscure sexual and urinary disorders can be traced directly to the verumontanum.

2. In cases where the symptoms are referable to the posterior urethra and bladder neck and in which prostatic massage, posterior instillations and intravesical irritations do not give relief, a thorough urethroscopic study should be made for the trouble is most likely to be found there.

3. A complete history is very important.

4. Although startling results are often obtained by topical applications to the verumontanum, the pathology often is in the prostate, seminal vesicles, bladder or kidneys and must be eradicated before the patient can be cured.

TUBERCULOSIS

P. P. McCain, M. D., *Editor*, Sanatorium, N. C.

The Asheville Tuberculosis Seminar

There will be offered to the physicians of the South during the week beginning Monday, July 10th, an opportunity to take an excellent post-graduate course in the heart of the finest vacation land in all the South.

There are few physicians who do not need such a course and who would not be greatly benefited by taking it. There is hardly a week during the year when every practicing physician, no matter whether he is in general practice or engaging in a specialty, does not need to diagnose or treat one or more cases of tuberculosis. There has been too much of a tendency on the part of most physicians to depend on the tuberculosis specialists and the public health physicians to handle all patients with tuberculosis. In a recent address Dr. Irvin Abell, immediate past president of the American Medical Association, stated: "The medical profession must be looking for tuberculosis and bear in mind the possibility of its presence in all patients whether seen in the office, the hospital or the home. The profession must make it evident to the people of our country that every individual who has been in close contact with a case of tuberculosis even after the passage of some years, is under suspicion of infection to this disease and should be under medical supervision, with examination and re-examination annually, or oftener where indicated." At present only 13% of the patients admitted to the sanatoria in this country are in the early or minimal stage, 29.7% are in the moderately advanced and 57.3% are in the far advanced stage. If physicians generally would take an active interest in early diagnosis make free use of the tuberculin test and urge the positive reactors, particularly those who have lived in close contact with active cases, to be studied every year, these percentages would be reversed and the doctors would materially increase their income and also render a great service to society.

The Asheville Tuberculosis Seminar offers a unique opportunity for physicians to become informed on the latest methods of diagnosis and treatment. The course will be given by Asheville physicians who comprise a group of as fine specialists and teachers in the various phases of tuberculosis as can be found anywhere. Clinical tuberculosis will be considered from every angle, early diagnosis, the tuberculin test, interpretation of x-ray films, physical signs, the evaluation of symptoms, laboratory procedures, the administration of pneumothorax, surgical procedures and the treatment of the various complications. The course will be made intensely interesting and practical.

With the 840 patients at Oteen and 300 patients at the Western N. C. Sanatorium, in addition to the large number in the various private sanatoria in and around Asheville, there is a wealth of clinical material available that can rarely be equaled.

There will probably not be very much opportunity for recreation during the week of the Seminar; but what an opportunity for the physician who is interested in playing golf, fishing and mountain climbing to spend a week or more before or after the course in this wonderland of nature!

This is the third year the course has been offered. All those who have taken it previously are enthusiastic in their praise. All those interested in taking the course should communicate with Dr. Karl Schaffle, Chairman of the Seminar Committee.

MEDICAL MANAGEMENT

(From Page 281)

amount of pus may vary within wide limits. The prostatic fluid is allowed to dry on the slide, then it is fixed and stained with methylene blue, and with the Gram stain. Remember the patient may have more than one focus of infection.

Before excluding the prostate as a focus of infection obtain 3 negative microscopic reports, a week between the examinations.

I advise the patients to avoid highly spiced and highly seasoned foods, and strong alcoholic drinks. Light wines and beer are permitted.

See that his bowels move well every day. Moderate sexual indulgence.

Massage of the prostate per rectum is the most important element in the treatment, twice a week, and as the amount of pus diminishes once in 7 days, once in 10 days and, finally, once in every 2 weeks.

Routine massage—Beginning at the upper border of one lobe and stripping down toward the center, afterward moving the finger toward the lateral border and massaging toward the center, and then the lower border, massaging toward the center. The same procedure is followed on the opposite side. Two or 3 firm strokes of the finger are then passed over the midline. The massage must always be gentle and never produce pain.

The patient is instructed to report in the office with a full bladder and void an oz. of urine in each of 2 glasses. Massage is then carried out, after which the patient is instructed to empty his bladder.

Second is the use of heat to the prostate. We prefer the Eissner tube. The electric device of Bransford Lewis is satisfactory. We instruct the patient so that he can use them at home beginning twice a day, later once a day.

The patient, on his back, is given 5 c.c. injections of 0.5% and later 1% protargol. Then a penis clamp is applied to the glans, the patient lies on his back for 5 min. and part of the medicine flows back into the posterior urethra and bladder.

Vaccines have seldom, if ever, added anything of value to the treatment.

The disease is slow in responding to treatment, and the use of heat and massage must be persisted in for a long time. Give the patient periods of rest after he has been on massage treatment for 2 or 3 months.

UNIVERSITY OF WISCONSIN

(From Page 270)

Dr. Charles A. Doan, Columbus, The Reticulo-Endothelial System

Prof. Hal Downey, Minneapolis, Infectious Mononucleosis

Dr. Paul Reznikoff, New York, Polycythemia.

Physicians and others who are interested are cordially invited. A detailed program may be obtained by addressing Dr. Ovid O. Meyer, Chairman of Program Committee, University of Wisconsin Medical School, Madison.

NINTH ANNUAL CONFERENCE

(From Page 265)

will display the work of many of the leading biological photographers here and abroad.

The B.P.A. was formed to act as a clearing house for new ideas, to pool experiences, record standard procedures and disseminate information.

The B.P.A. Journal, quarterly, is furnished free to members. Membership privileges include a question-and-answer service; also the right to borrow loan albums and exhibits of scientific prints for study and display.

Further information about the Association and the Convention may be obtained by writing the Secretary University Office, Magee Hospital, Pittsburgh.

PNEUMONIA

(From Page 271)

of an automobile, can be avoided. Hospitals are essentials in the care of many of the sick; but hospitalization is to be advised with discrimination, and with the good of the patient rather than the convenience of the doctor as the chief objective. As we know there are a thousand different things that can be done for the patient with pneumonia. The essential things are the serum treatment, a few drugs, proper amount of heat, just enough opiate to give the patient proper mental and bodily rest, frequent change of position. I wish to thank these two gentlemen for their very instructive papers.

Dr. J. T. Wolfe, Washington:

In my experience it appears that I have reduced the treatment of pneumonia to its ultimate symplicity. At Columbia, S. C., three years ago, before this association, I presented a paper on bacterial vaccine therapy in which I outlined the treatment of respiratory infections with bacterial vaccines, citing results of such treatment and emphasizing the fact that in my entire experience with such treatment since 1915, since which date I have used these vaccines intensively and on literally thousands of patients, not a single case of pneumonia had followed or developed in any acute respiratory illness which I treated with bacterial vaccines, particularly with one composed of killed pneumococci and streptoccocci. Also, I can say

that other such complications as middle-ear abscess, mastoiditis, pleurisy and empyema have not developed; nor has a single case of pulmonary tuberculosis followed any chest cold that I have so treated.

I also stressed the fact that if I treated an already exisiting pneumonia within the first 24 to 36 hours after its onset it almost invariably subsided within two or three days. Particularly does this statement apply to influenza pneumonia which I consider far more vicious and intensive in its action than lobar pneumonia, of which latter I have seen only two cases in my practice over 29 years and both of these during the summer of 1938. One of these patients ill three days and was delirious, and the other had been ill a week and was in a comatose state, when I first saw them. Both of these patients, colored men, made full and complete recovery under pneumococcus and streptococcus vaccine treatment. The cost per dose is only about 17c and is so small that I do not add it to the bill. Regarding the lately developed drugs in use for pneumonia, such as the sulfanilamide group, I have had no occasion to use any of them as I have found the old reliable combination of strychnine, caffeine citrate, phenacetin, salol and aspirin to be thoroughly dependable without any of the depressing effects of the former. Complete rest in bed and general care must be employed in addition to these valuable adjuncts. In no case of pneumonia have I resorted to the use of type serum and have lost only one case in over 8 years and that was a young woman with influenza pneumonia with temperature of 104½° who got out of bed and prepared her own lunch, strictly against orders.

Dr. J. M. Northington, Charlotte:

I am always glad to hear something in opposition to the prevalent idea that the hospital room is endowed with magical powers. I do not agree with those that say the place for a sick person is in the hospital. I believe, in the great majority of cases, the place for a sick person is in his own bed at home. One of the important differentiatial diagnoses we have to make is what is good for the patient from what is good for the doctor! We can get a good deal of information from consiering this fact. During the World War many doctors were away with the soldiers, and the doctors that were left at home were very busy. It was good then to put patients in the hospital, as a doctor could pay about ten hospital visits in the time it would take to pay one in the home, and then everybody had money, so cost was no item.

A man came into my office one day to talk to me. He was in tears. His doctor had tod him to go to the hospital for an operation and he did not have the money to pay for the operating room. I sent him back to his doctor and told him to ask if the operation, which was a simple one, could be done in his office so he could save the hospital expense. The doctor did tell the man then that he could do the operation in his office, but the point I am making is that the doctor should have suggested this in the first place, and he didn't do it. Hospitals are good, but good things may be overdone. We have acitation about sickness costs. Unnecessary hospital board and unnecessary examinations—which may be so much more easily done in the hospital— have much of the responsibility for the clamor about the cost of medical care. We should place ourselves in the position of the patient! Just look in the obituary columns of the newspapers and see for yourself what a large number of doctors die in their own beds at home!

Dr. H. J. Langston, Danville:

I am a general practitioner and interested in the treatment of patients in their own beds. Since starting practice nearly 20 years ago I found that I could not do all of my laboratory work so I hired a technician who has been extremely helpful. I say get your own technician, do your own typing, and treat pneumonia cases at home. Also have your baby at home, or if necessary have your baby in the hospital and in 24 hours take mother and baby home in an ambulance. I believe the best place in the world to keep a man fighting is at home in his own bed. Unless you have a purse a lot longer than most folks hospital expenses will eat you up! People working in factories pay 25c per week to belong to the Mutual Benefit Association. We can beat that Association idea by getting a technician in your own office. When my technician goes away for two weeks I am lost without her and welcome her back with open arms. To my mind we have got to beat that Association idea. I told the insurance company, "I will not pay any more premiums as you will be broke in ten years".

Dr. David Smith, Duke University:

My experience has been entirely in the hospital. However, I am endorsing what you have been saying. I believe inadequate laboratory work has been the reouble in cases treated at home. You have laboratory control. To have this it is not necessary now to have the patient in the hospital. Most of the little hospitals now have a technician in the hospital. I believe the best plan is to have two technicians—one in the hospital and one roving technician. Then the doctor can call a technician to come to the home when necessary. By pooling resources the doctors can have laboratory work done satisfactorily and at a very low cost per patient. Have a technician that can go out to the homes, and your problem will be solved.

Dr. Wm. H. Kelley, Charleston:

There are one or two important principles to keep in mind:

1. Every man can employ—support the patient's reserve to combat the disease.
2. Doing something to damage the invading organism or inhibit its growth.

I am very much impressed with Dr. Wolfe's experience with vaccine. I believe it is very hard to tell just what you are accomplishing with vaccines. Like Dr. Smith most of my experience has been in hospital work. I commend very highly the treatment of patients in the home that have been brought out. Treatment determines very definitely how the patient is going to get on.

Cancer Studies at Wake Forest

The Committee on Cancer of the North Carolina State Medical Society, held a Clinic and Symposium on Tumors, in the Johnson Memorial Medical Building at Wake Forest May 29th.

At the first session held at 10:00 a.m., Dr. Wright Clarkson of Petersburg, Va., President of the American Society for the Study of Neoplastic Diseases, discussed Radiology as it Relates to the Diagnosis and Treatment of Tumors. At the second session at 2:00 p.m., Dr. J. Shelton Horsley of Richmond, past President of the American Society for the Study of Neoplastic Diseases and a member of the Board of Directors of the American Society for the Control of Cancer, spoke on cancer of the Gastro-intestinal Tract.

Members of this Committee are Dr. H. B. Ivey, Goldsobro, Chiarman; Dr. C. C. Carpenter, Wake Forest; and Dr. T. L. Lee, Kinston.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Control of Hemorrhage by the Gauze Pack

Control of hemorrhage is of fundamental importance to the surgeon. Before the days of Ambroise Paré in the sixteenth century, burning oil was poured into the wound or the cautery was used for this purpose. Without anesthesia, in his day surgery was indeed a nightmare, and undertaken only in case of dire necessity. He was the first to ligate the bleeding vessel. This method of controling bleeding at operation is fundamentally the one used in modern surgery today, although the application of it has been facilitated by aseptic technique and by the use of modern instruments, hemostatic forceps especially.

He knew nothing of asepsis nor of absorbable ligatures. His ligatures were of silk or linen and were not sterilized, so ultimately they came away in the purulent discharge from the wound. Under such conditions secondary hemorrhage must have been a common complication of wound healing. In the days of Paré surgery was largely limited to the repair of wounds, amputations and drainage of abscesses.

Today when we have the advantage of asepsis and of anesthesia and every region of the body is within the domain of the surgeon the control of hemorrhage is still a problem that severely taxes the skill of the surgeon. One cannot apply a tourniquet to the head, neck, or trunk to stop hemorrhage until the bleeding vessel can be exposed and tied. Indeed, when tumors or inflammatory masses have literally to be dug out of the tissues in removal, the whole surface of the bed from which they have been removed may bleed. All tumors do not have pedicles which may be clamped and ligated before removal. The right renal vein is large and short. In inflammatory lesions of the right kidney it is often so friable that its walls give way when the ligature is applied. There is no pedicle to catch. The patient is practically bleeding from the vena cava. Attempts at ligation or suture only make the bleeding worse. The patient is septic and anemic, a poor risk to start with. Control of bleeding must be prompt and it must be sure or the patient will bleed to death on the table. In such a case pressure from the gauze pack is the only effective way we know to insure hemostasis. Even arterial hemorrhage may be controlled by it. We have a case of nephrectomy, a case of traumatic tearing of the spleen from its pedicle, a case of abdominal apoplexy in an old negro from spontaneous rupture of the superior mesenteric artery—all of which have been controlled at operation by pressure from the gauze pack, for in no case were we able to ligate or suture the bleeding vessels. The gauze pack is not recommended as an ideal method of hemorrhage control, but in cases of emergency it may be life-saving.

Certain principles in its application should be observed. All bloodclots should be removed from the wound so that the gauze itself comes in direct contact with the bleeding tissue. The pack must be placed and continually reinforced with more gauze until *adequate* pressure has been applied to the bleeding point. In arterial bleeding the pressure must be greater than in venous bleeding. To facilitate removal, the pack, after it has been placed, should be surrounded with rubber dam. Removal should not be begun until the seventh day, when, by organization of the blood clot, plugging of the vessel is well under way. In the meantime the gauze has become infiltrated with serum—and mucus when the wound involves mucous membrane —so that it lies practically free in the wound.

It should be noted that to control bleeding from the uterus, the uterine cavity, in most cases, need not be packed tightly with gauze, for the foreign body excites muscular contractions which cause the uterus to grip the gauze in an effort at its expulsion. Because of the danger of infection a uterine pack should always be removed within 24 hours. After abortion or delivery an indwelling catheter should be worn in the bladder to protect the pack from soiling by urine.

PUBLIC HEALTH

N. Thomas Ennett, M.D., Health Officer, Greenville, N. C., *Editor*

The Eastern State Sanatorium

The livest public health issue in eastern Carolina is the matter of the location of the eastern State Tuberculosis Sanatorium. Not only is the medical profession interested but the chambers of commerce of the respective communities are active in presenting their claims for consideration. Competition is keen. What a change! A few years ago no community would bid for such an institution. A tuberculosis hospital would depreciate property values and would tend to spread tuberculosis in the community!

Today we believe it is not only an economic asset but a public health asset as well. The daily example by the sanatorium of good hygiene soon spreads to the surrounding community and raises the general standard of health habits of all the citizens.

(Continued to Page 301)

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHIN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

NICHOLAS COPERNICUS
(1473-1543)

AFTER lying dormant for a thousand years following the time of Galen, in the 15th century Medicine had full participation in the intellectual awakening of the age of experimentation that was destined to shake the intellectual and religious world. This awakening was not limited to any one field; it embraced all the fields of learning—Art, Literature, Science and Philosophy. It was the beginning of the Renaissance. This movement flowered in the 16th century and it is interesting to note that two physicians played stellar roles. One of these physicians, by his discoveries in astronomy, revolutionized science in general, established astronomy on a sound basis and changed the attitude of the religious world. This was one of the high-water marks in the separation of science from religion. The affair was long drawn out and many battles were lost, but the war was won.

The other physician went to man for the study of man and not to the writings of Galen. He revolutionized medical thinking and founded the modern conception of medicine in general and anatomy in particular.

Another interesting thing to note is that Copernicus and Vesalius each published his one great book in the same year—1543. Copernicus' title was De Revolutionibus Orbium Coelestium; Vesalius wrote De Humani Corporis Fabrica. This may well be taken as the birth year of modern science.

Copernicus was a native of Poland and received the degree of doctor of medicine from the University of Cracow. He later studied at the two Universities of most renown at that time—Bologna and Padua. This was a many-sided man but he majored in three fields. Doctor Henry S. Pritchett writes, "He spent his life really in a three-fold occupation of his ecclesiastical duties, mainly of an administrative sort as canon of the Cathedral of Frauenberg; his gratuitous medical practice among the poor to which he gave himself devotedly; and his mathematical researches into the theory of the planetary motions."

After studying the motion of the heavenly bodies for years, in 1543 he published his treatise on the revolutions of the planets around the sun, giving proof that the sun was the center of the universe and that the earth and planets moved around the sun. This discovery in the field of astronomy was particularly calculated to disturb the religious status. The Copernican theory, based on this discovery, shocked the authorities of that day. Astronomy was one of the oldest and best established sciences of that day. There were frequent allusions to it in the Bible. The church made use of it, establishing the periods for many of its activities. The calendar of that day was largely based on astronomy. It was a guide to farmers in connection with planting and reaping.

It is not surprising then, that the publication of the Copernican theory of the earth's movements should upset the religious world.

I quote a statement from W. R. Inge:

"The discovery that the earth, instead of being the center of a finite universe, like a dish with a dish-cover above it, is a planet revolving around the sun, which itself is only one of millions of stars, tore into shreds the Christian map of the universe. Until that time the ordinary man, whether educated or uneducated, had pictured the sum of things as a three-storied building consisting of Heaven, the abode of God, the angels and beatified spirits; our earth; and the infernal regions, where the devil, his angels and lost souls are imprisoned and tormented."

The first copy of the book was placed in Copernicus' hands as he lay dying. He probably did not realize what it was because he had suffered a stroke of paralysis some time before and died a few hours later, on the same day—May 23rd, 1543.

His death at the time of the publication of his book was probably the happiest possible denouement. In all likelihood it saved him from such an experience as Bruno underwent in 1600 at the hands of The Inquisition, for teaching the revolution of the earth—burning at the stake; or from the less severe but more humiliating experience of Galileo—that of being forced to recant.

Of course it is barely possible that Copernicus could have weathered the storm had he lived, because he occupied a favorable position in the church and in the religious world. He held important positions in The Church throughout his life and he dedicated this book, which was destined to produce such prolonged and heated controversy, to the Pope—Paul III. He anticipated trouble over the publication of the book and his theory and asked His Holiness to defend him against those who might attack him. However, it is clear that he intended to stand his ground because in the dedication of the book he makes this statement:

"If there be some babblers, who, though ignorant of all mathematics, take upon them to judge of these things, and dare to blame and cavil at my work because of some passage of Scripture which they have wrested to their own purpose, I regard them not, and will not scruple to hold their judgment in contempt."

1. Scribner's Magazine, January 1924.

GALILEO
(1564-1642)

Florence, the home of the Renaissance and the seed-bed of genius, was the birthplace of Galileo. He was born of poor but noble parents. As a child he showed such extraordinary aptitude and cleverness that his father determined to make every sacrifice to educate him to be a doctor. With the help of a well-to-do uncle, young Galileo entered the school of medicine of the University of Pisa in September, 1581.

But it did not take him long to become disgusted with the dry lectures which were simply re-hashes of the writings of Hippocrates and Galen. Instead of accepting the statements made by his professors he wanted the reasons, with demonstrations and experimental proofs of what he was told. Unable to get this information from the professors he began to observe for himself and attempt to explain all that he observed. This inquisitive turn of mind accounted for one of his first discoveries.

He was convinced that the book of life was the source of learning and not the literature of the ancients. For him the statements set forth in books were to be experiment and observation, and to stand or fall accordingly as they met this test.

He entered the Cathedral of Pisa one day just after the sexton had filled the oil lamp in the great chandelier. The process of filling the lamp left it swinging from side to side and Galileo, while others were praying, was intently watching this phenomenon. It appeared to him that regardless of whether the lamp swung wide or in a narrow semicircle the time occupied in each swing was the same, and by counting his own pulse he verified this. The simple observation seemed wonderful to him—almost incredible. He went back home and taking two threads of the same length and attaching a piece of lead of the same weight to the end of each he suspended these over nails, forming two pendulums. Again using his own pulse-beat as a measure of time, he corroborated his observation in the cathedral and thus discovered the laws of the pendulum.

Then he reversed the procedure and used the pendulum to time his pulse beat. Observing the unerring regularity of the swing of the lamp and the weighted strings, he conceived the idea of constructing a mechanical device that would accurately determine the rate and variation of pulse. He constructed such an instrument and called it the *pulsilogia*. This was immediately accepted by the physicians of the day as a standard instrument for studying the pulse and was the forerunner of the present-day sphygmograph.

Following this he became more interested in mathematics than in medicine and was given a professorship of mathematics in the University of Pisa. However, much of his teaching was at such variance with that of the other professors that soon he became unpopular. He insisted that it was a mistake to accept without question conclusions thousands of years old. One of the first points of controversy was in regard to the velocity of falling bodies. The entire faculty differed with him and made slighting remarks about this young upstart. Galileo took up the challenge and invited the faculty and student body to witness one of his experiments. Accordingly, all gathered at the leaning tower of Pisa. Until this time everyone had held with Aristotle that the speed of the fall of a given object was in proportion to its weight. Galileo claimed that weight had nothing to do with it and that, for example, two iron balls of different weight dropped simultaneously from the same height would earth at exactly the same time!

The professors and students gathered around the leaning tower as if they were attending a county fair, ready to make jokes at the expense of the young professor. Galileo went up into the leaning tower in spite of the ridicule of the crowd. Upon reaching the top of the town he propounded the problem again—he then released two iron balls of different weights. It was a dramatic moment. The laughing, jostling crowd saw that the balls began to fall together—saw that they stayed together in their descent—then had it proved before their very eyes that the balls reached the earth at exactly the same time!

In this connection one may recall the greatest field experiment ever performed when, three hundred years later, Pasteur accepted the challenge of the French Veterinary Society. In response to this challenge Pasteur went to a farm near Nelum on May 5th, 1882, and vaccinated 25 sheep against anthrax; on May 17th, he vaccinated them with the second and stronger dose; then on May 31st, he inoculated these 25 and 25 others, that had not been vaccinated, with anthrax. When he returned on June 5th the 25 that he had vaccinated were all well, while, of the other 25, 22 had died, two more died in a few hours, and the 25th died during the night!

Notwithstanding Galileo's clear demonstration by means of the falling weights, the professors would not believe and antagonism to his work and himself increased until he was forced to give up his professorship at Pisa. But soon he was offered a professorship of mathematics at the University of Padua, and here he developed into a great inventive genius. Not only did he perfect improvements on existing mechanical contrivances and make numerous minor discoveries, but Galileo invented the thermometer, the compass, and several types of hydraulic machines.

His greatest invention was the telescope. It is true that a Dutch optician had, while manipulating glasses for ordinary spectacles, happened to look through two lenses at the same time, one concave and the other convex, and realized the effects; but he knew nothing of the scientific basis upon which the observation rested.

Galileo heard of this and began to work on various lenses and soon constructed the first telescope, completing it August 1st, 1609. With a group of friends he went to Piazza San Marco thence to the top of the Campanile, and each looked through the instruments and saw some of the wonders of the sky. This invention and this experiment did more to lay the foundation of modern science than any one experiment in history. Galileo continued to study the heavenly bodies and proved that Copernicus was right—that the sun did not move but that the earth and planets did. Also he announced that the moon had mountains and deep ravines, and that the milky way was not "the Divine stream crossed by souls after their death, washing away the memory of their past existences before they began the cycle of a new life," but in reality was formed by a myriad of stars. Also he maintained that Jupiter was surrounded by small stars and that he saw rings on Saturn. He published his book, A Message from the Skies, and stated in it that the earth turns on its axis and revolves around the sun. This was too much for the church and Galileo was summoned before The Inquisition in Rome.

Two charges were presented against him. These were that he believed and taught:

"First: *The sun is the center of the world and of the Universe and motionless in all local movement.*

"Unanimously this proposition has been declared stupid and absurd as a philosophy, and formally heretic because it contradicts in express manner sentences in the Holy Scriptures and is contrary to the proper interpretation of those words and the common acceptance and the sense given them by the Holy Fathers and the doctrines of theology.

"Second: *The earth is not the center of the world, nor motionless, but changes its place entirely according to its diurnal movement.*

"Unanimously this proposition is declared false as a philosophy and no less erroneous according to the Faith and the Catholic truth."[1]

After threatenings of persecution and imprisonment Galileo recanted and signed a statement that he did not believe what he had written and promised not to teach his doctrine again—and asserted that he did not believe the Copernican theory. Accordingly, he was given his freedom but later, in 1632, he published his Dialogue, a discussion of astronomical theories, and in this he reiterated his former beliefs and again was summoned to Rome for trial. Yet again he recanted, got down on his knees and apologized, and stated that he did not hold the opinion of Copernicus—had never held this opinion since the order was given him to abandon such beliefs. Nevertheless he was put in prison but through the intervention of influential friends a concession was made and the penalty was commuted to banishment and he was allowed to live under guard in the dwelling of a friend. His health soon broke and his eyesight began to fail but during this time he summed up the basic principles of mechanics and these were published under the title, The Laws of Motion And The Resistance of Bodies. Galileo completed this treatise in 1634, but before it was published he had completely lost his sight; so when the book came from the press he could only hold it in his hands and never had the pleasure of seeing his work in print. One is reminded of the experience of Copernicus who received a copy of his great book just a few hours befor his death, after he was too near death even to realize what it was.

We should be slow in criticising Galileo for his apparent lack of courage in sticking to his convictions.* It must be remembered that he was living in a time when intolerance was at its height and persecution for unorthodox beliefs was the order of the day. Furthermore, Galileo felt sure that his work was foundational and would some day be accorded its rightful place in the development of Modern civilization.

---

[1]. Emile Namer, *Galileo*, Robert M. McBride & Company, New York, 1931.

*EDITOR'S NOTE.—In a lecture to the class of the Medical College of Virginia of which the editor was a member, Dr. William H. Taylor said of Galileo's recantation:

"The aged philosopher went down before the overwhelming power of the Church and he was forced to become the central figure in a mummery whose ludicrous ritual, however, was put out of sight by its tragical associations.

. . . We may feel some disappointment that Galileo did not show the resolution of Bruno, and there have been men in our age of free thought and free speech, when it is perfectly safe to defy the Inquisition and Stake, who have been so ungenerous as to sneer at the broken old man yielding, when his life was balanced against an astronomical proposition. I am compelled to regard his conduct with the fullest sympathy and charity. What substantial inducement could he find for offering his body to be burnt? To die for one's country, or for one's religion, it is universally agreed, is glorious; but to perish in behalf of the rotation of the earth is a sacrifice for which it is not easy to arouse any great amount of enthusiastic admiration. Many a saintly martyr, indeed, consuming at the stake, has been triumphantly sustained by his assured belief that his chariot of fire would transport him to a haven of eternal and ineffable bliss; but the belief for which Galileo was asked to lay down his life is as little able to afford consolation in the hour of death as would be a meditation on the gyrations of a grindstone."

At another time Dr. Taylor contrasted the constancy of Bruno with the inconstancy of Peter, saying Bruno was "more faithful to his earthly Mistress (Science) than the Prince of the Apostles to his Heavenly Master"; and yet, the Church, in burning Bruno at the stake, "derived its authority from the shifty saint, himself."

ROBERT BOYLE
(1627-1691)

ROBERT BOYLE, philosopher, physician, father of modern chemistry and theologian was born in Ireland, January 25th, 1627.

He studied medicine at Oxford under the great Sydenham and there the M. D. degree was conferred upon him in 1665. That Sydenham thought well of Boyle may be gained from the fact that Thomas Sydenham's Method of Treating Fever, based on his own Observation is dedicated to Robert Boyle.

In 1641 Boyle had visited Italy and was a student of Galileo and was greatly impressed with the "new knowledge". On his return to England he became greatly interested in chemistry and did pioneer work on the chemistry and physiology of respiration. In 1660 he showed that air is necessary for both life and combustion. This was more than one hundred years before Priestly discovered oxygen in 1774. He was the founder of analytical chemistry and was also the first to define chemical elements.

However, he is best known as the discoverer of Boyle's Law which he announced in 1662. The essence of this law is that at a constant temperature the volume of a gas is inversely proportionate to the pressure.

He did not confine his intellectual activities to medicine and chemistry. He was one of the founders of the Royal Society of London for improving natural knowledge. He wrote on philosophy, ethics and religion. It is said that he learned Greek, Hebrew, Chaldee and Syriac in order that he might read the Scriptures in the original. He wrote much on religious subjects and it is said that in 1665 he was offered a provostship of Eton, but refused on the ground, "my writings on religious subjects would have greater weight coming from a layman than a paid minister of the church."

LUIGI GALVANI
(1737- 1798)

THIS Italian physician was professor of anatomy and physiology in the University of Bologna. In 1792 he published the results of his experiments with muscle-nerve preparation on frogs and this might be called the beginning of laboratory work in physiology and is one of the standard experiments in that course today. It is said that he accidentally discovered the electrical properties of excised tissue while working in his laboratory. He observed that the dissected frog's leg would twitch when placed in an electric current and this led him to investigate the whole field of animal electricity. This in turn led him to investigations in the general field of electricity in which he became a pioneer. Today his name is perpetuated in this field by such terms as galvanism, galvanize, galvanic current—the electrical current produced by chemical action which is the basis of the ordinary electric batteries. Also the galvanometer—an instrument for detecting an electric current, its duration and its strength.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D. ..... Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP ..... Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. } ..... Charlotte, N. C.

Urology

HAMILTON W. MCKAY, M.D.
ROBERT W. MCKAY, M.D. } ..... Charlotte, N. C.

Internal Medicine

P. H. RINGER, M.D. ..... Asheville, N. C.

Surgery

GEO. H. BUNCH, M.D. ..... Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D. ..... Danville, Va.
IVAN M. PROCTER, M.D. ..... Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D. ..... Richmond, Va.

Pediatrics

G. W. KUTSCHER, JR., M.D. ..... Asheville, N. C.

General Practice

WINGATE M. JOHNSON, M.D. ..... Winston-Salem, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D. ..... Wake Forest, N. C.
R. P. MOREHEAD, B.S., M.A., M.D. ..... Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D. ..... Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D. ..... Greensboro, N. C.

Public Health

N. THOS. ENNETT, M.D. ..... Greenville, N. C.

Radiology

ALLEN BARKER, M.D.
WRIGHT CLARKSON, M.D. } ..... Petersburg, Va.

Therapeutics

J. F. NASH, M.D. ..... Saint Pauls, N. C.

Tuberculosis

P. P. MCCAIN, M.D. ..... Sanatorium, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

THE TRANSACTIONS ARE DEAD: LONG LIVE THE JOURNAL

THE Medical Society of the State of North Carolina, at its annual meeting held last month, decided to discontinue publication of a volume of *Transactions,* e cept as to the business features of its meetings, and to have its addresses, papers etc. published at monthly intervals. In taking this action the Society followed the plan adopted by the vast majority of the State Medical Societies. Not more than two or three, we believe only one, of these societies, adhere to the publication of their professional proceedings in the form an annual, one-volume book.

By sending out the proceedings in a monthly publication, the addresses and papers will be in the hands of the members before they have lost the appeal of freshness, before they have been outmoded by subsequent discoveries in this age of rapid advance. Also, messages which the officers may wish to send may be readily, effectively and cheaply so transmitted to the whole membership.

Southern Medicine & Surgery was voted the official journal of the Medical Society of the State of North Carolina some ten years ago. However, as publication of *Transactions* was not discontinued, this vote was no more than a gesture. The arrangement now being made, by dispensing with the greater part of the *Transactions* and having a copy of the monthly publication go to each member, promises to produce gratifying results.

It is possible for *Southern Medicine & Surgery* to feel complimented in the conduct of this change in the way of putting the proceedings of the annual meetings and other affairs of the State Society before the members. Of the seven who make up the committee appointed to arrange for the change, four are Department Editors of *Southern Medicine & Surgery.* Dr. Paul Ringer has ably conducted the Department of Internal Medicine for nearly all of the dozen years of the present ownership and management. Over most of this time, Dr. Wingate Johnson's inherited and cultivated skill with the pen has made the Department of General Practice a favorite with our readers. Dr. C. C. Carpenter has kept us informed on laboratory procedures and their interpretation through his Department of Clinical Chemistry and Microscopy. Although Dr. McCain's Department of Tuberculosis does not extend over so many years, its Department Editor has rapidly brought it to full maturity and usefulness.

And one of these four, Dr. Wingate Johnson, is to be Editor-in-Chief of the new publication. We do not yet know whether Editor Johnson will

have time to spare to his old Department. We trust so. Anyhow, we are sensible of the compliment, and we join in the applause.

Keep Children at Home and Keep Them From Having Poliomyelitis

There are many cases of poliomyelitis in South Carolina. In the past few days the disease has shown itself just across the line at Fort Mill. Most likely by the time this is mailed cases will be reported on our side of the line. The sensible thing to do is to keep children from congregating.

We have no reliable preventive inoculation, and we have no reliable cure. It is no great hardship on children to stay at home for a while. Perhaps it would be best not to keep them from playing with the children in the immediate neighborhood; but the part of wisdom is to forbid their going to parties, picture-shows, Sunday schools—even family reunions, until the situation clears.

The risk of killing or crippling is too great a one to run for the little added pleasure or profit that children may derive from assembling in droves. "Those who perish in needles dangers are the Devil's martyrs". It is our plain duty to exert ourselves that neither our own children, nor those placed by their parents under our care, be so martyrized.

Why Don't They?

Regularly, about this time of year, we anticipate that a good many reckless persons will kill themselves by diving into water that is assumed to be, but is not, deep. Regularly, we look for same warnings from health officers. Regularly, we write an editorial urging doctors to tell the families who look to them for health guidance never to dive into a pool, a river or a creek without first *going in and finding out* that it is deep enough. Even if one has been in that same water the day before, currents may have filled it in or a log may have floated down.

Last Sunday and Monday three young men in North Carolina broke their necks in this way. Maybe there were more.

Family doctors do not have the opportunity the health officers have. We wonder that health officers do not have newspapers publish such warnings weekly, beginning about April 1st and continuing through September.

What Can Be Done About Mental Illness?

(G. L. Sandritter, Norfolk, Neb., in *Ill. Iowa State Med. Soc.*, May)

An educational program must be carried out to make people realize that before the individual becomes insane, he has been mentally sick for some time; they must be

(To Page 300)

NEWS

Buncombe County Medical Society

The tenth meeting of the B.C.M.S. for 1939 was held May 22nd, at the City Hall at 8 p.m., Pres. Griffin in the chair, 50 members present.

Visitors from Greenville and Union, S. C., were introduced.

Dr. John Young then presented a case of Cancer of the Penis, with recovery following operation. Dr. Young discussed the procedure followed in this case.

Dr. Edward Schoenheit read a paper on Etiology and Diagnosis of Coronary Artery Disease, Dr. Leon Feldman on the Treatment of Coronary Artery Diseases—the two discussed by Drs. Craddock, Crow, Edwards, Johnson, C. H. Cocke, a guest from South Carolina, Baier, Kutscher, and closed by the essayists.

Dr. Griffin then recognized Dr. J. L. Ward and Dr. F. Webb Griffith who had been recently elected member of the State Board of Health for a four-year term, and as Vice President of the State Medical Society, respectively. Dr. Griffin made several announcements relative to the June program, announcing the cancellation of the second meeting in June. He also urged the use of the available copies of the Bulletin as personal invitations to doctors who might be interested in the Seminar

—*G. W. KUTSCHER, JR., Secretary.*

Dr. J. W. Tankersley, Greensboro, recently entertained the Rotary Club of Reidsville with a movie-illustrated account of his fishing and hunting experiences in Alaska last fall.

ELIXIR
DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing Pharmacists
Established in 1887

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request

Dr. J. B. Riddle has been designated Chief-of-Staff of Grace Hospital, Morganton. The position had been occupied by the late Dr. E. W. Phifer from the opening of the hospital in 1906 until his recent death.

Dr. John W. Ervin, Morganton has been elected physician to the North Carolina School for the Deaf at Morganton to fill out the unexpired term of the late Dr. E. W. Phifer.

Dr. Alfred W. Hamer, of McCall, South Carolina, has opened offices in Morganton.

MARRIED

Dr. David Alexander Young, of Raleigh, and Miss Alma Page Stanley, of Belmont, Massachusetts, were married on May 6th. Dr. Young is a member of the psychiatric staff of McLean Hospital, Waverly, Massachusetts.

Dr. Leslie Van Dyke Dill, of Dover, Delaware, and Miss Catherine Elizabeth Isenhour, of Durham, were married on May 19th.

Dr. George William Lawson, of Star, and Miss Edna Ann Thomas, of Chapel Hill, were marred on April 29th.

Dr. John Franklin Jonas, of Marion, and Mrs. Marie Smith Griffin, of Valdese, were married on May 31st.

Dr. Allyn Blythe Choate and Miss Sarah Glover, both of Charlotte, were married on June 10th.

DEATHS

Dr. James Kennedy Corss, 70, died at his home at Newport News, Virginia, June 6th. He was a native of Pennsylvania, an academic graduate of Amherst College, and a graduate in medicine of the University of Pennsylvania. For many years he had been a leading physician and prominent citizen of Newport News.

MENTAL DISEASES

(From Page 299)

taught the early symptoms of poor mental adjustment, that continuous pain of the mind, day after day, week after week, is just as much a reason for going to a doctor as is pain in the body which stays with him week after week; they must be taught that early treatment offers the best chance of recovery.

These patients should have had a check-up by Blaylock family physician before being seen by the consultant.

These people who cannot afford to go to a private psychiatrist must be allowed to *apply for treatment at the State Hospital, upon the recommendation of their family physician*, for a period of from 3 to 6 months, *without a commitment*. Such a change would enable many people to have earlier treatment, since they would escape the shame and stigma of a commitment. Since the state's burden is getting larger every year, we do not have adequate facilities for handling the problem as we see it today, this would automatically keep the state from competing with private psychiatrists and accepting as patients people who could well afford to go to a private institution or a private psychiatrist for treatment. The family physician would also serve as a means of defense against allowing a patient of adequate means asking for care by the state.

E. ZEH HAWKES, M.D.—That is the name and title of the President-Elect of The Medical Society of New Jersey.

BOOKS

VARIOUS VERSE, by Beverley Randolph Tucker, Richmond, Va. 1938.

That doctors of a hundred years and more ago were more versatile than those of today is not to be wondered at. The sum total of medical knowledge of those times could be readily acquired in a few months, and naturally, active minds turned to other fields for their mental exercise. Even today, a few doctors of unusual mental acuteness and energy, find the time and inclination to serve Minerva, as one may say, doubly acceptably—for is she not the patroness of poets as well as of physicians?

The author says he has despaired of writing a great poem. Anyhow, he has written some good poems, poems that will add to the sum of human happiness by opening new vistas to his readers.

One can not doubt that Minerva has looked upon the work of Beverley Tucker, the Poet, as upon the work of Beverley Tucker, the Physician, and called both good.

DISEASES OF THE NOSE AND THROAT, by Charles J. Imperatori, M.D., F.A.C.S., Professor of Otolaryngology, New York Polyclinic Medical School and Hospital; and Herman J. Burman, M.D., F.A.C.S., Adjunct Professor of Otolarnygology, New York Polyclinic Medical School and Hospital. Second edition revised; 480 illustrations. *J. B. Lippincott Co.*, Philadelphia, London, Montreal. 1938. $7.00.

This remarkably complete book begins with telling how a specialist in this line should equip his office and an emergency bag, and then it tells how to use this equipment. There is a chapter on the use of cocaine. The authors are good doctors, for they believe in rest in bed. For necessary operations they list instruments and describe their use in detail. Bronchoscopy and allergy are given the

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

space their importance warrants.

This is an excellent covering of the subject of diseases of the nose and throat.

ENDOCRINOLOGY IN MODERN PRACTICE: By William Wolf, M.D., M.S., Ph.D., Endocrinologist to the French Hospital, Attending Endocrinologist, Misericordia Hospital, New York City; Consulting Endocrinologist, New York University Dental School. Second Edition, Completely Revised. 1077 pages with 176 illustrations. *W. B. Saunders Company*, Philadelphia and London. 1939. Cloth, $10.00 net.

The subject is introduced with a lengthy preface in which the interdependent functioning of the various glands of internal secretion is outlined. One can never cease to marvel when he considers the many essential functions served by the bean-sized structure at the base of the brain, called the pituitary. As to Fröhlich's syndrome, care of the parents "with the aim of avoiding the occurrence of endocrinopathy in the offspring" is advised. Heredity is assigned an important place in the causation of tumors. The many physiologic and pathologic activities of the thyroid and ovary engage thoughtful study. The author tells us that 20% of all endocrinopathies are due to hypoövarism, and that intense longing for pregnancy or fear of it may lead to lessened ovarian function. We are introduced to Simmond's diseases, the Laurence-Biedl syndrome and Perkin's test for iodine tolerance. It is estimated that more than 50% of all cases of hyperthyroidism not vigorously treated change into thyroid exhaustion. For some reason tumors of the adrenal cortex occurs 5 times as often in girls as in boys. Pineal tumors occur in boys almost exclusively.

All the many parts of the large subject are covered with meticulous care. There is an excellent chapter on interpretation of laboratory findings, another on the choice and description of endocrine disease conditions. An extended tabulation is made of symptom diagnosis which will prove helpful in many baffling cases. Description and dosage of available endocrine products are given; and, finally information on the use of such products for the pharmaco-dynamic action.

It would seem that here is assembled all that is known on a subject of the first importance to every practitioner of general medicine, or of any of its specialties.

SANATORIUM

(From Page 292)

In its effort to combat tuberculosis the State wisely decided to erect another sanatorium. Physicians know that until we discover a specific remedy for the disease our sheet anchor in its control and cure is *rest*—and that this *rest* must be under medical supervision. To this need the sanatoria is the answer.

ASAC

ELIXIR ASPIRIN COMPOUND

Contains five grains of Aspirin, two and a half grains of Sodium Bromide and one-half grain Caffeine Hydrobromide to the teaspoonful in stable Elixir. ASAC is used for relief in Rheumatism, Neuralgia, Tonsillitis, Headache and minor pre- and post-operative cases, especially the removal of Tonsils.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

GENERAL

Nalle Clinic Building

THE NALLE CLINIC 412 North Church Street, Charlotte

Telephone—3-2141 (*If no answer, call* 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
GYNECOLOGY & OBSTETRICS

EDWARD R. HIPP, M.D.
TRAUMATIC SURGERY

PRESTON NOWLIN, M.D.
PROCTOLOGY & UROLOGY

Consulting Staff

DOCTORS LAFFERTY & BAXTER
RADIOLOGY

HARVEY P. BARRET, M.D.
PATHOLOGY

General Medicine

LUCIUS G. GAGE, M.D.
DIAGNOSIS

LUTHER W. KELLY, M.D.
CARDIO-RESPIRATORY DISEASES

J. R. ADAMS, M.D.
DISEASES OF INFANTS & CHILDREN

W. B. MAYER, M.D.
DERMATOLOGY & SYPHILOLOGY

WADE CLINIC
Wade Building
Hot Springs National Park, Arkansas

H. KING WADE, M. D.	*Urology*
CHARLES S. MOSS, M.D.	*General Surgery*
J. O. BOYDSTONE, M.D.	*General Medicine*
JACK ELLIS, M.D.	*General Medicine*
FRANK M. ADAMS, M.D.	*General Medicine*
N. B. BURCH, M.D.	*Eye, Ear, Nose & Throat*
RAYMOND C. TURK, D.D.S.	*Dental Surgery*
A. W. SCHEER	*X-ray Technician*
ETTA WADE	*Clinical Pathology*
MARY ALICE PHILLIPS	*Clinical Pathology*
MARJORIE WADE	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building **Charlotte**

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building **Charlotte**

HERBERT F. MUNT, M.D.

FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS

Nissen Building **Winston-Salem, N. C**

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., JULY, 1939 No. 7

Surgery of the Biliary Tract*

FRANK S. JOHNS, M.D., Richmond, Virginia
Johnston-Willis Hospital

FROM remote times, the pathology of the gallbladder has been of interest to students of surgery. Down the farthest slopes of historical mortality gallstones have come rolling, gathering little moss, we suppose, but clogging many an important gallbladder duct, jaundicing many a famous face. Cholecystitis seems to be no respecter of persons; rather it has often sought out and brought down the most prominent of victims. Alexander the Great heads the list.

In the *British Journal of Surgery,* Gordon Gordon-Taylor presents the following case-report:

"In the case of Alexander the Great, the diagnosis of gallstones, or at least of cholecystitis, rests on no post-mortem examination; yet there is much in his mode of life and in the record of his final illness that is consistent with such a diagnosis. On June 1st, 323 B.C., he gave a private dinner to his Admiral Nearchos and his chief officers; the festivities were carried on till a late hour. From this feast he went to the house of a Thessalian, where the carousal continued until dawn of June 2nd. After spending the day in heavy sleep he again repaired to the house of his host of the preceding night and once more made merry until morning. During the night he toasted each of the 20 guests, draining a large goblet of wine in honor of every man; he afterwards complained of a *stabbing pain in the back, and felt feverish and sick.* Despite this, on the morning of June 3rd he was able to have a bath, to partake of a little food, and to make his accustomed morning sacrifice at sunrise. He lingered on until June 13th, racked with fever and growing weaker and weaker."

Thus, "Cholecystitis, cholelithiasis, or some complication of biliary tract pathology may have cut short the career of one of the greatest leaders of mankind, and his dreams of a world empire with Babylon the capital of the East and Alexandria of the West were dissipated by his premature end from an abdominal crisis."

It is Gordon-Taylor's further opinion that Quintus, the poet-farmer, better known as Horace Horatius Flaccus, who died in 746 B.C., had cholecystitis. The great Latin himself refers to an attack following a dietetic indiscretion, mentioning garlic as increasing his symptoms. In a more modern paragraph of his colorful research, our British colleague refers to the fact that the great John Hunter had both coronary thrombosis and gallstones. He recalls that Dr. Samuel Johnson, the great lexicographer, suffered much from gallstones, and that Sir Walter Scott had biliary colic during some of his most prolific years of novel writing. Two more men of distinction who were known victims of gallbladder disease were two former Presidents of the Royal College of Surgeons.

During the past twenty-five years of our latest surgical history, there has been a gradual lowering of mortality in the surgery of the biliary tract. Certain important factors are responsible for it. Among them are better equipped hospitals, better trained surgeons with abler assistants, closer coöperation between the referring physician and the surgeon. We have also our improved laboratory facilities with a clear understanding of their interpretation, and a greater knowledge of the physiology, pathology and chemical changes occurring in the disease.

In 1933, I reported before the Virginia State Medical Society the results of 498 cases of cholecystitis operated on at the Johnston-Willis Hospital. The report was precipitated by the trend to immediate operation in acute cholecystitis then apparent and currently popular in this country. It was a comparatively good report, with a mortality not higher than 4.6% in the group of acute cases.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

and 1.9% in our chronic series. We can never be satisfied, however, with our surgical results. There is always room for improvement. Even an occasional death in surgery of the gallbladder must forcibly remind us of this needful fact.

To date, our series of surgical gallbladders totals 673 cases. In the five years since my last report, we have done 177 gallbladder operations, of which 92 were acute cases. Our combined mortality in this later group is 1.7%. In the 92 acute cases, there were 3 deaths, or 3.2% mortality. In the 85 chronic cases, we have had no operative mortality.

But lest we should ever seem to know enough about the causes of death in diseases of the biliary tract, let us review the report by Colp, recently published, of 130 autopsies performed in cases of cholecystitis, both operative and non-operative. They comprise all the biliary autopsies made at Mt. Sinai Hospital, New York. From his findings, Colp divides his causes of death into three groups. First are those in which disease of the gallbladder itself was the ultimate lethal agent. The author here emphasizes the fact that too many patients are allowed to go on with repeated attacks of acute cholecystitis before the disease is diagnosed. The increasing severity of such attacks will finally be the cause of death. Yet many patients are still allowed to suffer with cholecystitis over periods of years before being submitted to operation. That a large number of elderly persons are found to have this disease is due to such lack of early diagnosis and treatment.

In the second group of Colp's post-mortem study are those interval cases in which death was due to the surgeon's error in judgment, to faulty technique, peritonitis, operative injuries, wound rupture, pulmonary complications, or cardiac failure. The third group consists of cases of carcinoma, with its complications.

The author notes with emphasis that no death followed an acute cholecystitis, unless suppurative peritonitis existed at the time of operation. This finding alone should have weight as to the time of operation in such cases. By it we are directed to operate very early in the disease, or to wait patiently until the acute symptoms have subsided. Yet it appears that in one-third of these 130 autopsy cases death ensued from acute peritonitis due to acute cholecystitis at the time of operation. It would seem, therefore, that the time of this operation is vital.

Three cases in this autopsy study had been diagnosed as "liver shock deaths;" but, while this is a rather popular expression, this diagnosis was not substantiated in a single case. Suppurative pylephlebitis, that most serious and fatal complication, accounted for 8 deaths, and was contributory in 5. Eleven pneumonia deaths in the series remind us of the importance of respiratory complications; while 10% of all the deaths reported were due to technical errors, and could have been prevented with proper training and care on the part of the surgeon, a rather sad check-up on our hospitals and the ability of the surgeons.

General post-mortem findings, from the literature, show that 20-30% of all adults have gallstones, and many authors state that an additional 20% have cholecystitis. Of course, this high mortality occurs usually in patients advanced in years, since obviously the older the patient, the longer the infection has been present, and the older is his disease.

A high percentage of our patients with gallbladder disease are driven to operation by pain, and by pain only. But we must realize that a chronically diseased gallbladder is not to be regarded as a harmless possession. We must impress upon our patients the hopeful fact that the sooner such a member is operated on, the better his chance of enjoying general good health.

Here I wish to report briefly four cases, the first a typical case of acute cholecystitis.

Case I.—Unmarried white woman, aged 33, admitted Dec. 27th, 1938, with history of having been awakened at 2 a.m. three days ago by severe pain in her epigastrium, which radiated to her back and shoulder-blade. This lasted one hour, only to return this morning. A hypodermic gave temporary relief. Pain was followed by nausea and vomiting. The patient had had symptoms for 31 months previously, with two similar severe attacks. She had been treated for indigestion. Examination showed localized tenderness over the gallbladder region. Temperature 98.6, W.B.C. 10,350 (with 70% polys), urine negative. The patient was promptly operated on, and an acutely inflamed gallbladder was found filled with pus and many stones. There were no stones in the common duct, but considerable thickening about the duct. The gallbladder was removed, the common duct explored and drained.

Case II was an atypical case of gallbladder disease. A white man, aged 39, early in 1938 had an attack of pain in epigastrium associated with nausea. The pain was severe enough to require ½ grain of morphine, but did not radiate. He has had 5 or 6 attacks since, but without nausea. All attacks occurred at night. This patient had had indigestion with gas for 15 years. He had been treated for discomfort in epigastrium. The pain under right shoulder was called lumbago. Gastro-intestinal x-ray and treatment for duodenal ulcer gave no relief. He believed meats tended to precipitate an attack. He got no relief from soda. *Had no jaundice.*

The present attack started Dec. 25th, 1938. Morphine gave relief, and patient wanted to return to work the next day. He was admitted to the Johnston-Willis Hospital Dec. 26th. Temperature was 98, W.B.C. 8,000, (76% polys). Urine negative, Wassermann negative. The one symptom was pain just at the lower border of the sternum. There was *no tenderness* at any time, only pain, high in the epigastrium. X-ray examination showed a pathological gallbladder.

This patient was operated on promptly. Findings at

operation: an enlarged, thickened gallbladder, containing pus and a stone. The common duct contained no stones. A cholecystectomy was done.

Our third report is of a case that was rather poorly handled by many doctors over a long period.

Case III.—A white man, aged 60, eructation of gas and indigestion for years, treated by numerous physicians. For the last five years he had frequently traveled to another city, where he usually had proctoscopic examinations and was given treatment for indigestion and colitis. For a time he was rather satisfied with this treatment; but in the spring of 1938 he got discouraged, and turned to local talent again. His pain was thought to be cardiac. A thorough examination revealed a gallbladder with stones.

A cholecystectomy was done. Numerous stones were found in a contracted, thickened gallbladder. This patient has gained 12 pounds since operation, and eats heartily with no resultant discomfort. His colitis has disappeared and he is now enjoying good health.

The fourth is a typical case with symptoms extending over 40 years. This patient was operated on in 1929.

Case IV.—A white man, aged 80, who with frequent attacks of abdominal colic for the last 40 years. His pain radiated to the shoulder. No jaundice until 10 years ago. Since then he has been yellow after each attack of pain. He was severly jaundiced on admission, and came prepared for operation. There was no haste about operating on this patient. When it was thought that his physiochemical assets were in the best possible condition, he was operated on under local anesthesia. A partial cholecystectomy was done, many stones removed and drainage established. The patient is living and well today. In all probability an immediate operation on this patient would have been fatal.

The three deaths among our 92 cases of acute cholecystitis operated on within the past 5 years were as follows:

1.—White man, aged 65, had had umbilical hernia for 40 years, asthma for many years. Recently he had had shortness of breath on exertion. He had had frequent attacks of pain in the epigastrium, which but thought due to his hernia. The pain continued, and he was brought to the hospital one week after an acute illness. He was operated on promptly and perforated acutely inflamed gallbladder found, and active peritonitis. Stones were removed and drainage established. The line of incision separated on the sixth post-operative day and it was resutured. The patient died 9 days after operation.

Post-mortem report: No peritonitis; very extensive adhesions. Anatomical cause: Dilated right ventricle; infarcts in the left ventricle.

II.—White matron, aged 58, had had definite symptoms referable to her upper right quadrant for the past four years. Pain was worse after meals. Cholecystograms taken elsewhere showed a non-functioning gallbladder with stone. Twenty-four hours after entering the hospital, cholecystectomy was done with drainage, finding empyema and stones. Patient died four days later. Cause of death undetermined.

III.—White matron, aged 37, had had attacks of indigestion for years. Frequent typical gallbladder attacks during the past 18 months, with violent nausea and vomiting. Had taken no purgatives. Patient was acutely sick when she entered the hospital four days after acute onset. Leukocytes 22,750. We delayed operation for three days, during which time she was given active treatment. At operation, an abscess was found around gallbladder, the result of perforation. Gallbladder was gangrenous, filled with stones. A partial cholecystectomy was done with drainage. Patient died 10 days later, probably as result of peritonitis.

There is much discussion of the stage at which an operation in biliary surgery should be undertaken. It is rather simple to decide on the stage. The difficulty arises when we must determine with accuracy the degree of pathologic change in a diseased gallbladder at any stage of the patient's illness. Was it in the early stages of inflammation when first seen by the physician? How are we to estimate the duration of illness?

Patients beyond middle age complain little in proportion to their symptoms. Many patients with recurrent mild attacks of accute cholecystitis fail to complain. Therefore, only a limited number of acute cholecystitis cases come to the hospital within the first 24 hours of their illness. In fact, if such cases were always operated on the day of admittance, it would rarely be an early operation, as in the routine phraseology of acute appendicitis; so undetermined is the usual onset of gallbladder illness.

Sane handling of acutely inflamed gallbladders must be individualized in each case. The decision to operate and the proper timing for surgical intervention depend primarily on the general condition of the patient. So great is the variety of problems in persons of gallbladder age, no hard and fast rule can be adopted. In my series of acute cases, I have operated relatively early, having no set time, but being guided by the condition of the patient and his estimated ability to undergo the operation, and not by any set standard. There have been many cases in which success rested on the patient's preparedness for the operation, rather than on the promptness of our procedure.

I have made no effort to remove the gallbladder in every acute case. As a matter of record, the gallbladder has been removed in 92%, and a partial cholecystectomy has been carried out in all but two of the remaining cases (one of the fatal cases which was drained only.) In a few of our most serious cases we have found a partial cholecystectomy a useful and solid procedure. If there is doubt about the patient's ability to withstand the removal of the gallbladder, I would urge a less extensive procedure. In my own series here reported, drainage (by a small rubber tissue drain) has been the custom; but I continue to close a certain number of cases without any drainage as advocated by my preceptor, Dr. A. Murat Willis, more than two decades ago. Hemostasis must be complete to close a case without drainage.

Once it has been decided with our consultant that an operation should be performed, the care with which it is carried out is vital. Colp's post-mortem findings showed that 10% of cholecystitis deaths were due to poor surgery—a stern indictment. We must, therefore, use utmost care in the dissection of a gallbladder, if we are to avoid injuries to the liver, the common duct, the duodenum and the colon. The variety of repairs for injuries to the common duct are discussed too often. If hemorrhage occurs the grabbing of the common duct with hemostats results in serious injuries. Such errors are due chiefly to lack of experience and training on the part of the surgeon.

Judgment as to when the given patient is suitable for operation and our best surgical technique are essential to maximum results in surgery of the biliary tract. We all agree that a good surgical risk with an acute cholecystitis should have a cholecystectomy. On the other hand, I hope very few surgeons would do an immediate cholecystectomy on an 80-year-old patient with profound jaundice. Was it not better to give him a liberal preparation before deciding to take out his gallbladder? We were quite satisfied to shell out his stones under local anesthesia and leave it at that. As mentioned, we had one such case 10 years ago, and the patient is now living at 90. His operation was not done as an emergency.

Our plea must be for prompt recognition by the attending physician and surgeon of those cases that do not respond to medical treatment. If the patient's condition justifies surgical interference, it should be done as early as is practicable.

In this series of acute cases, partial cholecystectomy was done in a few cases. It was used when complete cholecystectomy was anticipated, but was considered too extensive an operation at the time. In none of the cases in which partial cholecystectomy was done has it been necessary to reoperate.

Discussion

Dr. William Francis Martin, Charlotte:

For proper gallbladder surgery an intimate and thorough knowledge of the anatomy of the region is essential. It should be borne in mind that biliary disease is the most frequent single cause of indigestion.

As to diagnosis, to my mind the signs and symptoms take first place. We all know that this is a great age to make laboratory diagnoses. I believe we all depend too much on laboratory and x-ray findings. We have to depend daily on the aid of the laboratory, but that does not mean that laboratory reports can take the place of bedside study. Gallbladder drainage is another aid in diagnosis.

However clearly the symptoms may point to the gallbladder we must rule out heart conditions. In some cases it is necessary to have an electrocardiogram made.

If operation is to be done we want to first thoroughly fortify the patient for operation—this means glucose and saline and often blood transfusion. For acute cholecystitis after diagnosis has been made early operation is important as the gallbladder may rupture. In an acute attack if patient does not improve with treatment I advise early operation after fortifying the patient. Chronic cholecystitis with symptoms should be operated on. We want to know how to deal with common duct obstructions—whether to remove the gallbladder or leave it in.

In conclusion I want to say that the preoperative and postoperative treatment play very important parts. I also want to stress the importance of early operation as a preventive of rupture of the gallbladder and peritonitis. As to drainage—I may say that drainage will not do the patient any harm and will greatly relieve the doctor's mind.

Dr. Frank S. Johns, closing;

I want to thank Dr. Martin for his liberal discussion. There are many anomalies in surgery—sometimes I think we create our own anomalies! The case with classical story but with negative x-ray evidence worries us most. In regard to drainage—it is necessary that we have the patient rest the night after the operation, not the doctor!

When to Operate in Acute Appendicitis

(W. A. Hailes, Melbourne, in *The Australian & New Zeland Jl. of Surg.*, April)

Wilkie, in 1914, and again in 1931, emphasized two primary acute diseases of the appendix: *a*) acute inflammation of the wall, *b*) acute obstruction of the lumen. Wilkie held that these diseases differed essentially in pathology, in clinical symptoms and in their danger to life.

The onset of acute inflammation of the wall is acute but not dramatically so, and is associated with the usual constitutional symptoms. If these symptoms are treated conservatively they will very often subside, though they may lead to local abscess formation. Perforation of an ulcer due to a concretion can precipitate peritonitis.

Acute appendiceal obstruction is an intestinal obstruction of the closed-loop type and leads to early gangrene. Wilkie pointed out that gangrene can and does occur from 6 to 24 hours onwards, and that it results in the spread of highly toxic fecal contents over the peritoneal cavity. The colicky pain and vomiting of this type are distinctive features.

A clinical experience of these conditions teaches us that when inflammation commences in the wall the disease tends to be self-limited, with local abscess formation.

Because of occlusion of the lumen from swelling, the obstructive can be superimposed on the inflammatory type of lesion, and in these circumstances perforation is not so likely to occur on account of omentum wrapping.

Even the enthusiasts for the delayed treatment exclude children and the aged.

By the 7th to 10th day the most optimistic as well as the most foolish decide that drainage is all that can be accomplished, and little, if any, operative damage is done. The 3rd-, 4th- and 5th-day cases are those in which clumsy operative technique and faulty judgement will show their largest debit. Judgment in such cases is largely a matter of site of the incision and of how much is to be attempted in each case.

Acute appendicitis calls for urgent operation in all cases and at all phases until a localized abscess, unassociated with a spreading peritonitis, is evident. There is very little to be said in favour of the delayed treatment.

Decision as to the scope of the operation and the expedition with which it is completed are much more important than decision as to whether operation is necessary.

Stored Blood for Transfusion*

FREDERICK E. KREDEL, M.D., Charleston, South Carolina

THAT blood for transfusing may be stored in a refrigerator for a number of days before use has been well established by the Russian workers, who began their experiments about 10 years ago. They have now given transfusions of preserved blood in many thousands of cases. More recently the Russians have employed preserved uncitrated cadaver blood instead of that drawn from living donors. Shamov[1] in 1937 reported his first 42 cases of cadaver blood transfusions and Yudin[2] has reported 1000 cases. These investigators claim fewer reactions with unmodified blood drawn from victims of accidental death within four hours postmortem. No reports of cadaver blood transfusion have been reported outside of Russia and we will not consider that aspect further at this time.

During the past two years several reports on the use of stored blood have appeared in the United States. In 1937 Fantus[3] in the *Journal of the American Medical Association* described in detail the method of blood preservation and the use of the blood bank at the Cook County Hospital, Chicago. At that time it was stated that blood could be kept up to 3 or 4 weeks if hemolysis did not occur. However, Seed[4], chairman of their committee on blood transfusion, noted in the first 1000 cases that the reaction rate increased markedly after 11 days of storage. Lundy[5] in the annual report of transfusions in the Mayo Clinic for 1936 mentioned that citrated blood had been kept in the refrigerator for periods up to 12 days in 149 cases. In this month's issue of *Surgery* (February, 1939) Cameron and Ferguson[6] report the results of 1000 transfusions of stored blood at the Philadelphia General Hospital. In this hospital of 2700 beds a stock of about 40 flasks of blood are kept on hand at all times The average period of storage is 5 days. The reaction rate is 7.4% and no increase in reaction rate has been noted with blood stored for 2 or 3 weeks.

An English surgeon, Saxton[7], has reported the extensive use of stored blood in Madrid among casualties of the civil war in Spain, now, we hope drawing to a close. Goodall and Anderson[8], Canadians, have suggested the collection and preservation of cord blood obtained from the placenta at delivery as a ready source of blood for transfusion purposes. Mahoney[9] advocates the use of preserved plasma, rather than whole blood, in the treatment of certain types of shock. In such conditions as severe burns, where no great loss of cells occurs, compatible preserved plasma has been found to be the best means for combating shock.

During the past 9 months a blood bank has been in operation at the Roper Hospital. In all 345 flasks of blood have been placed in the bank. Because of the Cook County experience showing an increase in the reaction rate after ten days, we have limited our period of storage to that period. The average time of storage has been 3.1 days.

Our method has been simply to preserve ordinary citrated blood in a special refrigerator with precautions as noted in the accompanying regulations. Fifty c.c. of 2½% sodium citrate is used as an anticoagulant.

Of the 345 specimens 17 (4.9%) were discarded because of hemolysis or because they were left unutilized for more than 10 days. Proper bookkeeping and management should eliminate most of this waste. The Philadelphia bank has a wastage of 11%, almost half of it due to positive Wassermann reports. We do not place any blood in our bank until a negative report on the donor serum is at hand. This is obviously a necessity here where the percentage of positive Wassermanns in the colored race approximates 50%.

Blood Bank—9 months

Deposits	345
Recipients	
Type recorded	295
Type unrecorded	9
Untraced	55
Discarded	17
Now in Bank	5

That our book-keeping is far from accurate is evidenced by the fact that in 9 cases the type of the recipient is not noted and in 55 cases no entry whatsoever was made for the recipient in the ledger. Many of these were cases in which the blood had been stored for the particular use of a patient and the intern could not be bothered to fill out the withdrawal column. I know that I am entirely responsible for 4 of these omissions. The occasion was the tornado of last fall when 300 injured were suddenly thrust on our hands. That was indeed no time for book-keeping.

The amount of blood constantly on hand has averaged between 5 and 10 flasks. On several occa-

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

sions when the house staff became careless with replacements the bank became temporarily insolvent.

Types II and IV (Moss) have been the most useful types to store. Only 1.5% type I and 10% type III have been used. The accompanying table shows the distribution of types. Type IV donor blood is occasionally used for other types. In acute emergencies it may even be used without cross-matching. I have not observed any untoward reaction from this practice.

Types (Moss) %	I	II	III	IV
Donors	1.5	32.5	11	55
Recipients	1.5	37.5	10	51

Our reaction rate has been very low indeed. Only 3 reactions are recorded on our records, although mild ones may not have ben reported. In one case death followed transfusion of stored blood. This patient was an infant with bilateral pneumonia, otitis media and septicemia who was already moribund. The transfusion reaction on this case could have done no more than hasten by hours or minutes the inevitable result. Accidents from incompatibility have not occurred since the blood is cross-matched immediately before use.

The question may be asked whether blood loses any of its essential properties during the period of storage. We have information on only one property, namely prothrombin. Rhoads and Panzer[10], in the January 28th issue of the *Journal of the A. M. A.*, have reported that the prothrombin time of stored blood decreases rapidly. They therefore advise that only freshly drawn blood be used to combat the hemorrhagic tendency in jaundice.

Blood from seropositive donors should not be used. We have no assurance that spirochetes in blood may not survive many days in the refrigerator. Lacy and Haythorn[11] found survival of treponemes in the rabbit testicle refrigerated for many weeks. There is experimental evidence[12] that the addition of minute quantities of treponemocidal drugs may sterilize stored blood within a few days. However, until more evidence is at hand, it seems advisable not to run the risk of transmitting a venereal infection, even though the donor is presumably latent.

ROPER HOSPITAL

Directions for Use of Stored Blood

1. Selection of donors—
   Volunteer donors free from any disease transmissible by blood who can spare 500 c.c. of blood. Relatives and friends of patients. Other patients on ward with relatively minor ailments.
   Send two Wassermann tubes, 5 c.c. each of donor's blood to laboratory: (1) for Wassermann (2) for typing and later for matching.
   After Wassermann or Kline has been reported negative, donor may be used. Do not place any Wassermann positive blood in bank. Moss IV blood is most useful.
2. Withdrawing blood—
   A. Obtain not more than 500 c.c. of blood in flask or Baxter bottle as for ordinary citrate transfusion. Mix by gentle rotary agitation during withdrawal. Do not shake violently.
   B. Attach rubber stopper and cover flask aseptically.
   C. Label with—(1) Name and race of donor
      (2) Date
      (3) Name of patient to whose credit blood is deposited.
   D. Record these data also in transfusion book beside refrigerator, and add specimen number to flask.
   E. Affix a labelled Wassermann tube containing donor's blood firmly to flask with adhesive.
   F. Place blood immediately in refrigerator in Blood Bank Room.
3. Care of blood in refrigerator—
   A. Door of refrigerator will be kept locked. When deposits or withdrawals are to be made key may be obtained from (1) Operating Room supervisor during day, (2) Nursing supervisor by night, (3) Resident surgeon.
   B. Unnecessary and prolonged opening of refrigerator door to be avoided.
   C. If temperature of box is beyond the limits of 36°-42°F., notify operating room supervisor.
   D. Typing and Wassermann reports to be recorded both on flask and in book.
   E. Blood not to be used after ten days nor if hemolysis has occurred.
4. Giving blood—
   A. Except in emergencies transfusions and drawing of blood are to be performed between 1:30 and 3:30 p.m.
   B. Select the oldest sample of suitable type and of same race from list on book.
   C. Remove tube of donor's blood attached to flask and send with tube of patient's blood to laboratory for cross-matching.
   D. Record in transfusion book each withdrawal from bank with date and name of recipient.
   E. Warm to body temperature.
   F. Give blood slowly with or without saline as indicated.
   G. Discontinue the transfusion upon any sign of reaction while the blood is going in and administer adrenalin.
   H. Record any unfavorable reactions both on patient's chart and in transfusion book. These include (1) immediate reaction (2) post-transfusion chill (3) jaundice (4) urticaria (5) hemoglobinuria.
   I. When the blood is used for a pay patient and not replaced, notice of the amount used must be sent to the office so that a charge will be made.
   J. Physician (House Staff) taking blood from bank must replace it with at least an equivalent amount. As often as possible try to obtain twice as much to offset spoiling, lack of replacement, etc.
5. Administration—
   A. The management of the Blood Bank is under the direction of the Department of Surgery, who may set or alter the rules as the occasion arises.
   B. Other departments of the hospital and the Riverside Infirmary may use the Blood Bank on the same basis as Surgery.
   C. Services using stored blood without replacing it may

be deprived of the use of the bank until replacement is made.

D. The teaching fellow in Obstetrics will supervise the use of stored blood in that department, including the preservation of cord blood at delivery.

E. The resident surgeon will be responsible for seeing that labelling, keeping of bank book, and proper replacement are carried out.

References

1. Shamov, W. N.:- The Transfusion of Stored Cadaver Blood, *Lancet* 2:396, 1937.
2. Yudin, S. G.:- Transfusion of Stored Cadaver Blood; Practical Considerations; First Thousand Cases, *Lancet* 2:361, 1937.
3. Fantus, B.:- The Therapy of the Cook County Hospital; Blood Preservation, *J.A.M.A.* 109:128 (July 10) 1937.
4. Seed, Linden, Personal Communication, 1938.
5. Lundy, J. S., Annual Report for 1936 of the Section on Anesthesia, Including Data on Blood Transfusion, *Proc. Staff Meet. Mayo Clinic* 12:225, 1937.
6. Cameron C. and Ferguson, L. K.:- The Organization and Technique of the Blood Bank at the Philadelphia General Hospital, *Surgery* 5:237 (Feb.) 1939.
7. Saxton, R. S.:- The Madrid Institute for Blood Transfusion, *Lancet* 2:606, 1937.
8. Goodall, J. R., Anderson, F. O., Altimas, G. T. and McPhail, F. L.:- An Inexhaustible Source of Blood for Transfusion and its Preservation, *Surg., Gynec., & Obst.* 66:176, 1938.
9. Mahoney, E. B.:- A Study of Experimental and Clinical Shock with Special Reference to its Treatment by the Intravenous Injection of Preserved Plasma, *Ann. Surg.* 108:178, 1938.
10. Rhoads, J. E. and Panzer, L. M.:- The Prothrombin Time of Bank Blood, *J.A.M.A.* 112:309 (Jan. 28) 1939.
11. Lacy, G. R. and Haythorn, S. R., Viability of Spirochaeta pallida in excised tissue and autopsy material, *Am. J. Syph.* 5:401, July '21.
12. Organesjau, P., Salkind, E. and Kadjavoeva, V.:- Zur Phophylaxie einer Syphilisinfection bie der Blutransfusion, *Zentralbl, F. Chir.* 61:2144, 1934.

Discussion

John Elliot, Sc. D., Salisbury, N. C.:

The importance of blood banks is not generally realized. Fewer reactions may be expected from stored than from fresh blood. More life-saving transfusions will be given when blood is immediately available. The ease of administering blood from a blood bank with the new methods available makes it possible for all physicians to give their own transfusions; whereas the technic for immediate transfusions is more complicated and many doctors who give but few transfusions prefer to have some one else give them.

There are two types of major reactions: 1. the pyrogen reaction, typified by a chill and fever about 30 minutes after the transfusion is finished, with temperature return to normal in four hours, and 2. the imcompatible blood reaction. The pyrogen reaction may be prevented only by the exercise of meticulous care in preparing the recipient as well as the donor set using pyrogen-free distilled water. In this way we have reduced the reaction rate well below 1%. Only one reaction has occurred after the administration of stored blood, that after the transfusion of 250 c.c. of blood from a bottle which had been used for the same purpose 48 hours previously. Incompatible blood reactions can be entirely eliminated by careful typing and cross agglutinating.

The safe storage for blood we are investigating. Three factors seem to be of major importance—sterility, fragility of stored red cells and hemolysis. Sterility has not proved to be difficult to insure as we are using the sealed vacuum container which will soon be available for general use. Our preliminary tests indicate that there is an increased fragility of the red cell after the first 24 hours of storage and that each succeeding day finds the fragility increased, the rate being accelerated after the fifth day. Hemolysis has not proven to be a factor of importance.

Two factors have made the storage of blood in small institutions impracticable: 1. equipment which would make the aseptic collection and preservation of blood possible; 2. the wastage from blood passing the storage period in institutions where transfusions are given only occasionally. The first problem will be solved by the use of the sealed vacuum container which we are now using; the second by the preparation of plasma solution from the blood stored too long to be transfused whole. A technic is being developed which will make the aseptic separation of plasma from whole blood a simple procedure in any hospital. Plasma can be stored for a much longer period than whole blood, possibly indefinitely. Wassermann negative, typed plasma will be immediately available, and will not have to be cross agglutinated. In fact, we feel that incompatible plasma can be given with safety, and have given more than a hundred parenteral injections of incompatible plasma without a reaction of any kind. Further proof will, of course, be necessary and we hope to be able to furnish this soon.

Careful consideration of the indications for transfusions will reveal the fact that in the greater number of cases benefit is expected from the protein content, and that the red cells are of relatively little importance.

The majority of our plasmas are administered intramuscularly. Absorption is as satisfactory as when plain saline solution is given by the same route. Safety and ease of administration are the factors influencing our decision to give plasma intramuscularly.

Aseptic collection and preservation of whole blood and the conversion to plasma of out-dated blood makes the banking of blood possible for small institutions, and saves time and money in the large ones.

Dr. W. H. Prioleau, Charleston:

I have watched with great interest the workings of the blood bank at the Roper Hospital under the direction of Dr. Kredel. It has made possible some transfusions which otherwise would not have been given, and it has facilitated the giving of many others. I have noticed no reaction which could be directly attributed to the fact that the blood was stored. Probably the greatest benefit from its use is in conjunction with the children's department, in which one withdrawal of blood can be made to suffice for several transfusions, and not infrequently there is blood available for babies not so fortunate as to have donors.

It is still contended that the danger of a reaction is reduced to a minimum by the use of carefully matched unmodified whole blood given in an atraumatic manner. Until recently we used such a method, but had to abandon it on account of its being too great a burden upon the operating room. Now each department gives its own transfusions using citrated blood. The reactions have been few and of a mild type. This decentralization has been very satisfactory. The more recent use of the blood bank in connection with it has enlarged the scope and decreased the difficulties of the administration of blood transfusions. Whereas the transfusion of whole unmodified blood must still be used in certain cases, these cases are few.

Dr. F. E. Kredel, closing:

I think the plan to remove red cells and use plasma only is excellent and I think we widd adopl that plan.

The Continuous Drip Treatment of Peptic Ulcer—Comparison with OlderMethods*

T. Neill Barnett, M.D., Richmond, Virginia

SUCCESS in the treatment of so resistant a disease as peptic ulcer is all too often not attained through failure to appreciate some of the fundamentals of etiology, and, hence, failure to fulfill certain physiological conditions.

The theories of the formation of peptic ulcer are usually divided into the chemical, infarctive, inflammatory and traumatic. Recently, some investigators have recognized a neurogenic origin.

The histologic structure of a peptic ulcer is that of an inflammatory process and applies to all ulcers, whether their theoretical formation be chemical, infarctive, inflammatory, traumatic or neurogenic.

The stomach and intestine are capable of digesting the various substances that are ingested in the form of food; yet they do not digest themselves. Numerous individuals are encountered who have abnormally high free hydrochloric acid and pepsin in their stomachs, indicating a very active digestive process, existing for long periods, who never develop ulcer and apparently never suffer any inconvenience. On the other hand, ulcer is frequently encountered in the individual with normal free hydrochloric acid, although most ulcer patients have a high acid titre. The question that arises is: why does one individual with an active digestive phase develop ulcer and another remain free of ulcer under apparently identical conditions? It would seem logical to assume that a certain area becomes ulcerated as the result of some devitalizing process within the wall of the organ, such as an infarct or embolism or an ischemia of the tissues, and this localized area of devitalization is rendered susceptible to the action of the digestive process, resulting in the formation of an ulcer. External injury to the abdomen has been known to cause sufficient trauma to the stomach to devitalize an area and render it susceptible to digestive action and result in a typical peptic ulcer.

It is known that bacterial invasion from remote foci of infection results in ulcerations and tissue changes in other organs of the body. It should not be difficult to understand the lodging of an embolus, with resulting infarct, in the pyloric area of the stomach, especially in view of the anatomical arterial arrangement in these organs. In 1913 to 1915, Rosenow[1] demonstrated the relationship of foci of infection in the teeth and tonsils to peptic ulcer. Haden and Bohan[2], in 1925, further demonstrated this relationship in some very conclusive experiments, by injecting pure cultures of streptoccocci, obtained from apical abscesses of teeth in persons having ulcer, into rabbits, and producing characteristic ulcer lesions in these animals.

Hyperchlorhydria and hyperdigestive activity do not constitute the sole, or even the primary, cause of peptic ulcer; but their role is secondary to another factor which has resulted in an impairment of resistance of a certain area to the digestive process. Probably the most frequent primary factor in this localized devitalization of tissue is bacterial invasion resulting from some focus of infection.

However, once an ulcer has developed, the presence of excessive hydrochloric acid deters and even prevents its healing. This is evidenced by the work of Mann and Williamson, in that they were able to show that dogs that did not have their acid neutralized developed ulcer, and those having such neutralization did not develop ulcer.

If the treatment of peptic ulcer is to be effectual, it is necessary that both primary and secondary factors be recognized, and suitable measures for their eradication and control be instituted.

The primary or exciting factor has been suggested as bacterial invasion from some focus of infection, most frequently diseased tonsils, pyorrhea and apical tooth abscesses. Should we like to consider a neurogenic factor as primary, the effect is analogous, in that there is tissue injury with resulting ulcer formation. This latter process is indicated by Necheles[3] and others[4] as an excessive stimulation of the parasympathetics and vagi with liberation of acetylcholin in the tissues. This is a substance capable of stimulating the muscles of the stomach and intestines to extraordinarily forceful contractions. There results an anoxemia of the tissue, or actual trauma sufficient to render the tissue vulnerable to the excess acid or digestive process.

How can an ulcer heal if the granulations are digested faster than they can form? When the free

*Presented by title to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

hydrochloric acid is neutralized, a twofold result is obtained. First, the ulcer is relieved of the irritating effect of the acid; second, the pepsinogen secreted by the stomach remains inert unless activated by hydrochloric acid and converted into pepsin. Therefore, gastric digestion is suspended and the ulcer is not subjected to the digestive process.

Since the revolutionary change by Sippy in the treatment of ulcer with neutralization of acid in the stomach, our sheet-anchor has been the control of acid by suppression and neutralization. The belladonna alkaloids are still our mainstay in the supression of gastric secretion and should always be given to the point of physiological tolerance. Neutralization is accomplished by various alkalies, some of which have definite disadvantages. An ideal neutralizer should be a substance which is not absorbed, does not have an injurious effect on the gastric mucosa, does not stimulate further acid secretion after it has once neutralized the stomach contents, does not produce diarrhea or constipation, and is reasonably pleasant to take. With the exception of its being slightly constipating, colloidal aluminum hydroxide fulfils these requirements.

Neutralization of acid, to be effectual, has to be continuous throughout the twenty-four hours. This is difficult to accomplish by oral medication alone, as the patient does not obtain sufficient rest, which is an important part of ulcer treatment.

It is known that patients with peptic ulcer have a higher acid secretion after meals and during the interdigestive phase. This would indicate that during the night, when feedings and medication are suspended under the usual regimen, the ulcer is subjected to the insult of uncontrolled acid for a period of some five to seven hours. This, no doubt, is a factor which has contributed to the unsuccessful treatment of ulcer in the past.

The continuous drip of aluminum hydroxide, as evolved by Woldman[5], is probably the greatest advance that has been made in ulcer therapy since the Sippy regimen was introduced. The technique is comparatively simple. A small Levine tube or a collapsible tube is inserted through the nostril into, and just beyond, the cardia of the stomach. This is connected with a gravity flask containing a 25% solution of colloidal aluminum hydroxide, which, in turn, is connected with an apparatus that regulates the flow of the solution by means of vacuum. The apparatus can be regulated to permit a definite rate of flow, usually 15 drops per minute during the day and 20 drops per minute during the night. The patient is given sufficient sedation, by the use of bromides or barbiturates, to enable him to rest comfortably and to lie in whatever position desired. Belladonna or its alkaloids should be given in doses sufficient to produce definite dryness of the mouth and slight visual disturbance.

In view of the restricted diet allowed in these cases, it is advisable to make up the various vitamin deficiencies, especially vitamin B. The diet is regulated according to the individual requirements of the patient. Because of the tendency of fats to retard gastric secretion, it is my custom to give the patient two ounces of cream every hour from seven in the morning until nine at night, for about five days. After this, the diet is increased by the addition of well-cooked, strained cereals, toast, pureed vegetables, creamed soups, stewed fruits etc.

Under this management, the patient is usually free of pain in from three to six hours. Of special significance is the fact that night pains are relieved entirely the first night. Some patients who have never been able to obtain a full night's rest for months are completely relieved the first night after treatment is started. It has been demonstrated by Emery and Rutherford[6] that: "It required about three weeks for the free acidity to reach the same level in the oral cases as occurred in the drip cases at the end of the first week".

There is fear on the part of some to treat gastric ulcer medically because of the possibility of malignancy. The roentgenologist can be of tremendous help in determining the character of the lesion. Most of the fear can be allayed if we remember that gastric ulcer heals more readily and with less deformity than duodenal, and that cancer does not heal at all. With this in view, if there is not a definite healing of the lesion at the end of ten days with the continuous drip, or three to four weeks with other methods, the lesion is most probably malignant.

All too frequently, patients are seen who have been treated for ulcer unsuccessfully, and who are found to have badly diseased tonsils or advanced oral infection.

That peptic ulcer is often inadequately treated is evidenced by the accompanying charts. Chart I shows a series of 35 ulcer cases—10 private patients and 10 clinic patients, all treated by the usual Sippy regimen in the hospital, one of each group being gastric and nine duodenal; and 15 treated by the drip method, two of which were gastric and 13 duodenal. Chart II shows the average number of days under treatment in the hospital for private cases was 30, for clinic patients 31, and for patients treated by the drip method 14. The average age was 37.7 years, 35 years and 49.6 years for private patients, clinic patients and patients given the drip treatment, respectively. Chart III shows the results after treatment as indicated

Chart I
Number of Patients Treated and Type of Ulcer

	Gastric	Duodenal	Total
Private Hospital Patients on Sippy	1	9	10
Clinic Patients in Hospital on Sippy	1	9	10
Continuous Drip. $Al(OH)_3$	2	13	15

Chart II

	Average Number Days Treated In Hospital	Average Age of Patient	Race White	Race Negro
Private Hospital Patients on Sippy	30	37.7 yrs (24-49 yrs)	10	0
Clinic Patients in Hospital on Sippy	31	35 yrs (25-54 yrs)	2	8
Patient on Continuous Drip $Al(OH)_3$	14	49.6 yrs (32-66 yrs)	14	1

Chart III
X-ray Results of Treatment

	Disappearance of Ulcer	Improved, but Crater or Spasm Still Present	Unimproved
Private Hospital Patients on Sippy	3	7	0
Clinic Patients in Hospital on Sippy	0	3	7
Patients on Continuous Drip $Al(OH)_3$	8	7	0

by x-ray examination. The ulcer had disappeared entirely in *only three* of the 10 private patients, in *none* of the 10 clinic patients, but in *eight* of the *15* drip patients. Seven of the private, three of the clinic and seven of the drip group showed improvement. Seven of the clinic patients were unimproved against none unimproved in the other two groups.

Summary and Conclusions

1. Local tissue damage in the stomach or duodenum, resulting from some remote focus of infection or other cause, is the primary etiological factor in the formation of peptic ulcer.

2. The action of hydrochloric acid and the process of digestion is a secondary factor and prevents healing once the ulcer is formed.

3. A large proportion of ulcer patients are being inadequately treated, by failure to recognize and remove the focus of infection, and by failure to keep the acid neutralized continuously, day and night.

4. The continuous drip method described offers a nearer approach to uninterupted neutralization of gastric acidity.

Bibliography

1. Rosenow, E. C.: The Production of Ulcer of the Stomach by Injection of Streptococci. *J. A. M. A.* 61: 1947 (Nov. 29) 1913.

2. Haden and Bohan: Focal Infection in Peptic Ulcer. *J. A. M. A.* 84:409-413 (Feb. 7) 1925.

3. Necheles, H.: A Theory on the Formation of Peptic Ulcer. *Am. Jr. Digest. Dis. & Nutrit.* IV:643-644, (Dec.) 1937.

4. Dale, H. H. and Feldberg, W.: Chemical Transmitter of Vagus Effects to Stomach. *J. Physiol.*, 81,320, 1934.

5. Woldman, E. E. and Rowland, V. C.: New Technique for Continuous Control of Acidity in Peptic Ulcer by Aluminum Hydroxide Drip. *Am. Jr. Digest. Dis. & Nutrit.*, 2:733-736 (Feb.) 1936.

6. Emery, Edw. S., Jr., and Rutherford, Robt. B.: Studies on the Use of Aluminum Hydroxide Gel in the Treatment of Peptic Ulcer. *Am. Jr. Digest. Dis. & Nutrit.*, V:486-490 (Oct.) 1938.

THE ROARING GAP CHILDREN'S HOSPITAL, Roaring Gap, N. C. Opened June 15th for the 1939 season Rooms are $4.00 to $5.00 per day, with private bath $6.00 per day. Ward rates are $17.50 to $21.00 per week. Mother may occupy room with baby and may obtain board in hospital at reasonable rates.

Under direction of Dr. Leroy J. Butler, Winston-Salem, Dr. Carl Shepard is resident physician, Miss Mary Murphy, R. N.,Supt.

Maternal Mortality rates (U. S. Bureau of Census) for 1937 are 49 per 10,000 live births—14% lower than the 1936 rate, the previous low.

Some Newer Concepts of Inguinal Hernia

W. C. Hunsucker, M.D., and Douglas Jennings, M.D.,
Bennettsville, South Carolina

THE frequency of inguinal hernia and the percentage of recurrence after operative repair should prompt us to careful study of the anatomy of the structures involved, to an understanding of the method of production and, most of all, to careful study of the methods of successful treatment.

For years there has been a controversy as to whether indirect inguinal hernia is congenital or acquired. We know that the testicle's migration from the lumbar region to the scrotum is preceded by a portion of peritoneum, the tunica vaginalis, which normally becomes obliterated shortly after birth. If the obliterating process does not take place certain peritoneal pouches are left patent. The stage is then set for the development of an indirect (oblique) inguinal hernia; that is, an imperfectly obliterated peritoneal pouch which is located in the internal inguinal ring or the inguinal canal and closely associated with the spermatic cord which emerges through the abdominal wall at the external inguinal ring. It seems logical from this anatomical relationship to designate the indirect inguinal hernia as congenital.

That direct inguinal hernia is acquired has been generally accepted but consideration of the anatomic relationships suggests that the etiology of this type may also be explained on a congenital basis. The peritoneal sac of a direct hernia has no preëxisting path to follow, as has that of an indirect herina, but pushes its way through the abdominal wall through Hesselbach's triangle. This triangular space is bounded below by Poupart's ligament and the superior surface of the horizontal ramus of the os pubis, laterally by the deep epigastric artery and medially by the lateral edge of the rectus sheath. The floor of the triangle is formed by transversalis fascia. Fallis states that next to the umbilicus Hesselbach's triangle is the weakest spot in the abdominal wall since it lies directly behind the external inguinal ring. Thus one sees that there is sufficient anatomical evidence to justify classifying direct hernia as congenital.

To diagnosis the type of hernia is not very difficult, despite the frequent assertion that in some cases the diagnosis cannot be made before operation. As a rule direct hernias are seen in persons about middle life when there is a decrease in muscle tone and the fibrous tissue loses its elasticity. Not infrequently a direct hernia will develop without pain. In contradistinction, pain is a frequent symptom in indirect hernia and usually there is a history of trauma. With an accurate knowledge of the disturbed anatomy one can accurately diagnose the type of hernia by observing the passage of the contents of the sac through the abdominal wall. The contents of the sac of an indirect hernia come obliquely through the wall along the course of the spermatic cord in the inguinal canal. In the cases of direct hernia the contents of the sac come straight through the abdominal wall behind the external inguinal ring. If the sac is palpable in the scrotum one can be certain that he is dealing with an indirect hernia; the sac of a direct hernia never has an intimate relationship with the cord and cannot enter the scrotum. A direct hernia appears immediately when standing, whereas the indirect, having a more indirect route to travel, is slower in appearing. The diagnosis may be further established by digital examination of the weakened areas. When the skin of the scrotum is inverted with the fingers, in a case of indirect hernia the finger tends to course up and out in the line of the inguinal canal. On the other hand, digital examination of the weakness as seen in direct hernia gives one the impression of passing directly into the pelvic cavity. This is due to the disruption of the transversalis fascia which forms the floor of Hesselbach's triangle. To repeat, one must remember that the direct hernia never enters the scrotum and that the contents of the sac of the indirect hernia pass obliquely through the abdominal wall.

That there is no operative procedure applicable to all cases of indirect or direct hernia is established by the large number of techniques described. It is our opinion that hernia in children should be treated conservatively by non-operative methods until the age of six, unless strangulation or incarceration makes it necessary to perform an open operation. Herzfeld of Scotland advises early operation and in her hands a very simple and quickly-done operation has resulted in a high percentage of cures.

Since the larger percentage of hernias appear in the second and third decades of life it is this age group in which we are most interested. We are all familiar with the more successful methods of Bassini and Halsted and the advisability of trans-

plantation of the cord in most cases of hernia. From the anatomical relationship it is obvious that the method of repair of the direct and indirect hernia should be different in certain details. Kocher established the fact that the sac should be dissected free throughout its entirety and high ligation, or high and complete obliteration, of the sac is necessary to successful repair. Others have shown the necessity of repairing the inguinal canal in indirect hernia and Hesselbach's triangle in direct hernia. Unless fascial grafts are to be used —and we think them practically never indicated in inguinal hernia—one must utilize the reflected inguinal ligament, the conjoined tendon, the lateral border of the rectus sheath, the transversalis fascia, the internal oblique muscle and the inguinal ligament to close the hernial defect. One should have an accurate and complete knowledge of these structures to do an intelligent hernia repair.

The materials used to approximate the structures over the defect have been many. Catgut, silk, linen, autogenous fascia, ox fascia, kangaroo tendon and wire have all given good results in the hands of many surgeons. It is our opinion that there are definite indications for each of these and that the experienced surgeon will determine which is indicated in each case. Many years ago McArthur used living fascial sutures. He obtained his sutures from the mesial cut border of the aponeurosis of the external oblique, leaving the base attached for blood supply. Bisgard has recently described this technic in detail. After the sac has been dissected free and ligated as high as possible, the living suture is prepared by cutting a strip of fascia 0.5 cm. wide from the mesial border of the aponeurosis of the external oblique. The base is left attached to the periosteum just medial to the pubic spine. In order to get a strip long enough to close the entire defect it is usually necessary to begin detachment at the level of the muscle fibers of the external oblique. This is usually at level of the anterior superior iliac spine and gives a strip six to seven inches long. The fascia is threaded on a fascia needle and fixed with linen. Now that the suture is prepared the defect is closed by suturing the reflected inguinal ligament with the conjoined tendon to the shelving portion of the inguinal ligament. Usually one is able to get a few fibers of the rectus sheath in the second suture which further insures successful repair. The closure is continued upward to the internal inguinal ring where the free end of the suture is fixed with silk or chromic catgut. The cord is returned to its new bed and the aponeurosis of the external oblique closed over it.

We have used this method of repair in 32 cases with impunity. To us this method has certain advantages: 1) Less foreign material is used. 2) The fascia remains in place and unites with the tissues in which it is placed. 3) The reflected inguinal ligament is more easily approximated by using a suture which is fixed just medial to the pubic spine.

Unless non-absorbable materials are used the success of the repair is entirely dependent upon scar-tissue formation. Even when non-absorbable sutures are used there is still some question as to the support that they give in the scar. Autogenous living fascia is much stronger than scar tissue and it seems to us that a viable suture lends support because of its great tensile strength. Infection has occurred in none of our 32 cases. We do not think this the suture of election in large hernias where there is wide separation of the muscular and fascial structures, or in the aged or debilitated when the muscle fascia is attenuated. However, in hernias of small or moderate size in individuals with strong, well developed fascia this is the procedure of choice.

It is usually more difficult to secure an adequate closure in direct hernia. Just as in indirect hernia, complete removal of the sac is important. Recently we have followed the principles set forth by Fallis in obtaining adequate tissue to close the defect without tension. This consists of mobilizing and suturing the transversalis fascia to the shelving portion of the inguinal ligament. Muscle and more fascial tissue are obtained by freeing the aponeurosis of the external oblique medially, incising the aponeurosis of the internal oblique vertically for three inches and suturing the mobilized tissue to the inguinal ligament with catgut. The aponeurosis of the external oblique is imbricated and the medial flap covers the defect in the rectus sheath. It is true that our series of cases using this procedure is small (four cases) but there can be no doubt but that this method adequately strengthens the weakened Hesselbach's triangle.

Patients with unusually large hernias and all aged patients are asked to give consent for orchidectomy before operation. Not infrequently it is necessary to resect the cord in order to effect a successful closure. All of us have experienced the dilemma occasioned when orchidectomy should be done to insure a cure and consent for removal of the testicle has not been obtained.

Summary

1. The anatomy of inguinal hernia is discussed briefly.
2. The important points in differential diagnosis of inguinal hernia are discussed.
3. A method of using living fascial sutures from the aponeurosis of the external oblique in indirect inguinal hernia is described.
4. A method of mobilization of the internal ob-

lique in repair of direct inguinal hernia is also described.

References

1. Fallis, L. S. Direct Inguinal Hernia. *Annals of Surgery.* 107: 572-581, April 1938.
2. Herzfeld, Gertrude. Hernia In Infancy. *American Jour. of Surgery,* Feb. 1938.
3. Bisgard, J. D. Living Sutures of the External Oblique Aponeurosis in Repair of Inguinal Hernias. *S. G. & O.* 68: 113-117, Jan. 1939.
4. Wolfe, Ralph. The Management of the Hernial Sac. *American Jour. of Surgery,* June 1938.
5. DaCosta, J. C. *Modern Surgery,* Tenth Edition.

A Pediatric Program for the Family Doctor

(M. G. Peterman, M.D., Milwaukee, in *Jl. Kans. Med. Soc.,* June)

When the family doctor delivers a baby if he accepts his full responsibility, no one can ever come between him and his patient. It is his duty, after his first examination of the pregnant woman, to explain the importance of periodic examinations for the health of the unborn baby and herself. The family physician should be qualified to do a normal delivery and to supervise the care, growth, development and immunization program of the child.

He has stood by while the various agencies have usurped his place and lured his patients into prenatal clinics, baby clinics, pre-school clinics, parent-teacher's roundups, school clinics, anti-tuberculosis clinics, heart clinics, psychiatric conferences, adjustment conferences, and so ad infinitum. We must have an adequate public health program which will insure proper supervision and adequate medical care for the children of the indigent and the indifferent, but the well-informed family doctor will provide the necessary medical supervision of his private patients and will leave little for the crusading health agencies to garner. While the various public health organizations will have better advertising facilities and fewer scruples about using them, the family doctor has the first opportunity and the most intimate and confidential relationship with his family. If he is prepared to advise his patients, the radio and newspaper doctors will have little influence and the drug store windows small appeal.

Vitamins are cheaper in the grocery than in the drug store. The mother's thyroid gland must function properly and there must be sufficient iodine in her diet for the fetus.

It is almost the rule in the home and even in the hospital for the doctor who does the delivery to hand the child over to the grandmother or the nurse and then devote the rest of his time to the mother. It is the physician's duty to devote some of his time to a careful and complete examination of the new baby. The physician must determine if he expects a premature or even immature infant. Provision beforehand includes temperature kept between 99 and 100°, humidity between 50 and 75%. Immediate care of the premature will reduce the mortality from 45 to 25% or less. The newly born infant must be examined immediately to see if he cries and is breathing properly. If his lungs are not fully expanded the physician has some 24 to 48 hours to provide adequate expansion. Mouth to mouth breathing, carefully done, is usually sufficient; ninety-five per cent oxygen and five per cent carbon dioxide by inhalor is preferable. A yellow vernix caseosa and an abnormally large placenta in a jaundiced baby denote erythroblastosis fetalis or icterus gravis. A waxy pale infant denotes probable congenital anemia. A differential blood smear will settle the diagnosis immediately and prompt transfusions of whole blood will save lives. A delay of 24 hours may be fatal.

A drowsy or comatose infant may indicate nembutal or a related drug used during delivery. Oxygen and carbon dioxide may be necessary. Coma, convulsions, and cyanosis, particularly after a long second stage or a difficult delivery, may be symptoms of intracranial hemorrhage or injury. This infant should have a spinal puncture. If the fluid is bloody, the spinal drainage should be repeated every six or twelve hours until it is clear. The infant should be placed with his head elevated, covered with an ice cap and not disturbed. The feedings should be given with a dropper or by gavage.

Cyanosis in the newborn infant is due to atelectasis, intracranal injury, congenital heart disease, or drugs given to the mother.

Mongoloid idiocy should be detected at birth. A cretin should also be recognized and desiccated thyroid started early.

A congenital hydrocephalus is easily detected, and an examination should be made for spina bifida and meningocele.

An Erb's palsy should be recognized and treated immediately. A club foot or a dislocated hip should be promptly recognized and treated. The results of later treatment are much less satisfactory. The neck should be examined for fistulae or bronchial cysts.

The infant should be given a formula when he it twelve hours old of boiled diluted cow's milk or diluted evaporated milk and corn syrup. When the breast milk appears the formula may be continued to complement the breast as long as necessary. The premature infant should be fed after six hours a concentrated formula every one or two hours. He must be given cod liver oil and iron early and regularly.

The mother is instructed to bring the child into the office every month for the first year.

At the 1st month cod liver oil and orange juice are started.

At the 2nd monthly visit I note particularly the gain in weight and length, and the mental development. The infant should be able to hold his head up. If he looks pale a blood count should be done, at least a hemoglobin determination. The eyes should now focus. Eczema may make its first appearance.

At the 3rd month I advise immunization against pertussis with concentrated vaccine. Treatment is of little avail. The only drug of value is codeine in large doses. The earlier the vaccine is given the better. I give infants the double concentration vaccine, 1 cc. followed in one week with 1½ cc followed in another week with 1½cc.

At 4 months I look particularly for evidence of rickets, *i.e.,* pallor, head sweats, thickening of the costochondral punctions, etc. Cereal is now added to the diet to replace one milk feeding.

At 5 months I look again for rickets and anemia. A second cereal feeding is added.

At 6 months most infants should sit alone. Vegetables may now be added to the diet.

At 7 months I vaccinate the infant against smallpox. I do not vaccinate the newborn infant because it is not effective. I do not vaccinate infants with eczema until the skin is clear.

At 8 months I put the infant on whole milk, either evaporated or boiled. No child should ever be given raw milk. Boiling for five minutes makes a milk sterile and easy to digest. Boiling also homogenizes milk and makes a soft curd, whether these factors have any great value or not. Promotional advertising and ambitious young doctors have added vegetables and cereals to the infant's diets much earlier. Fortunately most infants can tolerate almost any food, but they will get along better and make as good

(To Page 316)

Erythroblastic Anemia

Report of two cases with a review of the literature*

CHARLES W. STYRON, M.D., Durham, North Carolina

TWO patients with erythroblastic anemia have been seen at the Duke Hospital. One of them has been followed seven years and because of interesting problems which have occurred the case is reported in detail. The other was seen in the outpatient department and no adequate follow-up studies were made.

Report of Cases

CASE I.—The patient is an undersized 12-year-old boy of Greek origin who was first admitted to Duke Hospital April 12th, 1932 at the age of 5 years, with a chief complaint of weakness, pallor and a mass in the left side of several years duration. One sister died at the age of 2 years with a condition similar to that of the patient. The patient was well until the age of two years. At that time the parents noticed that he was very pale and weak. Shortly thereafter the abdomen became protuberant. At the age of 2½ years a palpable mass was found in the left upper quadrant. He became progressively anemic and at the age of 3 years his first transfusion produced temporary improvement. Liver extract orally and parenterally did not seem beneficial. Later edema of the feet and ankles developed and he was transfused again with considerable improvement in his general condition.

Physical examination (4-12-32): T. 98.6°F., P. 140, R. 28, B. P. 105/75. A poorly nourished, pale boy of 5 years in no evident discomfort. There was moderate generalized glandular enlargement. The mucous membranes were very pale, the tonsils enlarged. The antero-posterior diameter of the chest was increased and the heart was moderately enlarged to the left. The heart sounds were rapid, rhythmic, with a loud blowing systolic murmur heard over the entire precordium. The abdomen was markedly distended. The spleen was felt 10 cm. below the costal margin, the liver at the iliac crest.

Laboratory data: Hb. 22% (3.4 Gm Sahli), R. B. C. 1,935,000, Color index 0.58, W. B. C. 18,500—P. M. N. 40%, S. L. 17, L. L. 35, Mon. 8, Bleeding time 4 min., Clotting time: 6 min., Platelet count 580,000, Reticulocyte count 0.6. There was marked aniso- and poikilocytosis. A few normoblasts and many stippled red cells were seen. No malaria parasites were found in the peripheral blood; van den Bergh—Indirect 1.5 mg. %. Tuberculin—negative. Wassermann—negative. X-ray examination: The skull and all the long bones showed marked decalcification and thinning of the cortex. Striated lines were seen throughout all bones.

Course: A blood transfusion was given while in the hospital and the patient was greatly benefited. He was given liver extract parenterally at weekly intervals, iron t.i.d. He was admitted to the hospital every few months thereafter for transfusions. On Jan 30th, 1933 he had extreme dyspnea and was found to have a second-degree heart block. Under repeated transfusions he gradually improved. On Feb. 21st, 1933 his spleen was removed. It was 5.5 x 15 x 15 cm. and weighed 375 Gm. The surface was slightly roughened but appeared othercise normal. Microscopically the splenic sinusoids were large and filled with blood. The malpighian bodies stood out prominently. The capsule and trabeculae were quite thickened.

Following splenectomy the patient felt generally better. This was attributed to the relief from the ever present pulling sensation caused by the large spleen. However, he showed no evidence of blood regeneration, although his preoperative level of 81% hemoglobin (12.6 Gm. Sahli) was maintained for three weeks; it then dropped to 66% (10.3 Gm.) during an attack of pharyngitis. Because of frequent sore throats a tonsillectomy and adenoidectomy were performed October 17th, 1933. A right premolar abscessed tooth was removed in October, 1934 without complication. The basal metabolic rate on March 27th, 1936 was plus 12%.

As a result of Nittes' and Spiliopulos' suggestion 0.3 Gm. (gr. v) quinine was given daily for a period of about 6 weeks in the summer of 1937. For 4 weeks the hemoglobin remained at 50% (7.7 Gm.) but then fell gradually and steadily as usual. The patient stated that he felt generally improved while on quinine therapy.

On Sept. 14th, 1937, 5 weeks following transfusion from a donor with negative serological reactions who subsequently was proved to have syphilis, the patient was admitted to the hospital because of a generalized skin eruption, sore throat, cervical adenitis. Three weeks previously he noticed the appearance of annular papular lesions over the body, arms and legs. This was followed in a few days by sore throat and fever. At the time of admission the patient was pallid and looked ill, the pharynx was hyperemic, the cervical nodes greatly enlarged and tender and numerous annular, papular, erythematous lesions were present over the entire body. The diagnosis of acquired syphilis in the secondary stage was made. On this admission: Hb. was 48% (7.5 Gm.), R. B. C. 3,190,000, W. B. C. 18,200—P. M. N. 50% (stabs 4%, J 4%), E. 2, L. L. 20, S. L. 24, Mon. 4 There was marked poikilo- and anisocytosis. The red cells were hypochromic. Many erythroblasts and normoblasts were seen. Platelets were numerous in the smear. No malaria parasites were found. Wassermann reaction was four plus on 9-16-37 and 9-21-37. The patient was given supportive treatment with transfusions. Anti-syphilitic treatment was instituted with neoarsphenamine. The pharyngitis, cervical adenitis and rash cleared up in a few days. After weekly treatment for the next three months the Wassermann became negative but the treatment was continued for 12 months.

On Feb, 25th, 1938 the patient was again placed on quinine sulfate 0.2 Gm. (gr. iii) t. i. d. For the next five weeks the hemoglobin dropped from 66% to 61%, a rate which was less than usual. He also felt generally improved while taking quinine.

X-ray pictures of the hands and long bones on March 26th, 1938 revealed marked thinning of the cortex of all the bones and considerable decalcification with punched-out areas in practically all the phalanges of the hand. The flat bones of the pelvis showed no marked changes. The ribs were all decalcified. The skull bones showed marked thinning of the inner and outer tables with widening of the diploe of the frontal bone.

An electrocardiogram taken on July 5th, 1938 revealed

*From the Department of Pediatrics of the Duke University School of Medicine, and Duke Hospital, Durham, N. C.

left axis deviation. There were occasional premature ventricular beats interrupting sino-auricular tachycardia. A chest plate at this time revealed marked cardiac enlargement. The lung fields were clear.

To date the patient has received 114 transfusions—23,500 c.c. of blood has been given at the Duke Hospital and additional blood at other hospitals. His development, both physical and mental has been normal. He is a good student and at present is in the 5th grade at school.

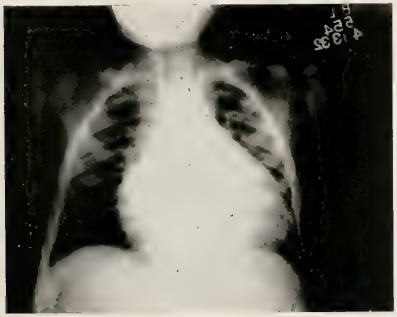
Case II.—The patient was an 11-months boy referred to the out-patient department Nov. 13th, 1935 because of anemia. The father and mother were both Greek. There were no siblings. The child was apparently normal at birth. The diet had always been inadequate. In a routine examination by the family physician at 3½ months the patient was found to be anemic. He was given iron for 3½ months without effect. In addition the patient had been given liver extract without improvement.

Physical examination: T. 97.4°F., weight 7450 Gm. He was well developed but underweight. Pallor was extreme. There was slight generalized glandular enlargement. The contour of the head was not considered abnormal. The spleen was 10 cm. below the costal margin, the liver 3-4 cm. below the costal margin.

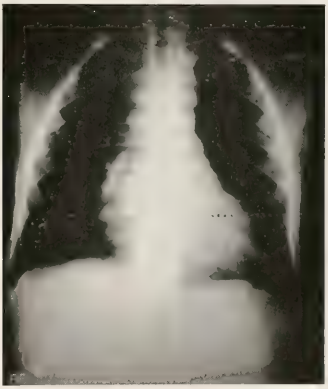
Laboratory data: Hb. 51% (7.9 Gm.), R. B. C. 3,750,000, W. B. C. 30,050—PM. N 42% (stab 4%), L. L. 8, S. L. 32, Lymphoblasts 5, Mon. 8, E. 1, Mye. 4, Color Index 0.67. The smear showed marked aniso- and poikilocytosis. The red cells were hypochromic. Many erythroblasts were seen in the smear. No parasites seen. X-ray examination: Films showed generalized decalcification of all the long bones and thinning of the cortex with some striation. The skull bones showed slight thickening of the frontal and the midparietal bones.

Case I. Age 5. Note the enlarged spleen and liver.

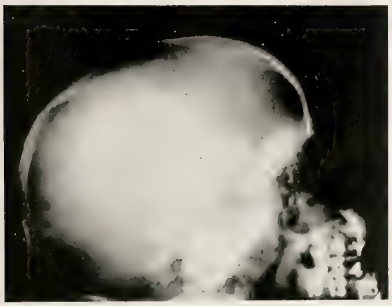
Case I. Age 11.



Case I. Age 5. Note marked dilatation of the heart due to the anemia.



Case I. Age 11. The heart is now only moderately dilated.



Case I. Age 6. Note marked thinning of the cortex with absence of the outer table in the region of the frontal bone.

This patient died of pneumonia at the age of 2 years.

Comment

Fifty-four cases of erythroblastic anemia were reviewed in the literature. Of these 34 were taken to their physician for more than one complaint. The most frequent complaints of these patients were as follows: Pallor 43%, weakness 28%, abdominal enlargement 15%, yellow skin 13%, anorexia 9%, loss of weight 9%, enlargement of the head 6%; 4% or less of the patients had epistaxis, fever, stunted growth, nausea and vomiting, ab-

dominal pain, bloating, muddy color, dyspnea on exertion, fatigue and loss of energy. One patient had a pathological fracture. The history that these patients present is therefore a combination of these chief complaints.

Of the 51 cases reported with recorded physical examinations the following were the findings: splenomegaly 96%, hepatomegaly 96%, mongoloid facies 31%, yellow skin 4%, pallor 3%, systolic murmur 3%, generalized lymphadenopathy 3%, enlarged heart 2%, fever 2%; and less than 2% with enlarged head, malnourishment, edema of hands, feet, face and orbits, enlargement of the condyles of the long bones, lethargy, mental retardation, clubbing of the fingers and toes, and healed fractures. It is interesting to note that 43% of the patients were considered by their parents to be pallid while in only 3% of the cases examined was this fact of enough significance to record. Certainly one would expect such findings as a systolic murmur, and pulse and respiration elevation to be more frequent than these figures indicate.

Splenectomies were performed in 20 of the 51 cases reviewed. Of these 9 were improved. Improvement consisted of decrease in jaundice, relief from the large abdominal mass, a general feeling of improved health, more rapid physical development, and less rapid fall in hemoglobin. By no means were all of these signs and symptoms present in each case. The remaining eleven splenectomized patients died of the disease itself, of intercurrent infection, or were not followed long enough to determine the results of splenectomy. Two of the patients who had splenectomy were followed 8 years and one was followed 14 years. All were improved. In no reviewed case did the patient survive longer than a few years without splenectomy.

Review of the Literature

In 1925 Cooley and Lee[1, 2] first called attention to a new form of hemolytic anemia associated with splenomegaly and bone changes, which occurred in children of Mediterranean parentage. The disease was congenital, familial and not hereditary, began in childhood and was chronic. Acute exacerbations of rapid fall in hemoglobin were brought on by infection or poor nutrition. The cases Cooley and Lee studied usually gave an indirect van den Bergh reaction, increased icteric index, aniso- and poikilocytosis, many nucleated red cells, megaloblasts, polychromasia and increased reticulocyte count. The color index was low and the fragility of the red cells normal. The platelet count was normal. The urobilin and urobilinogen in the urine usually was increased. Following splenectomy there was enormous increase in the nucleated red blood cells. In addition, the cortex of the bones was thinned and the bone marrow hyperplastic. In 1927 Cooley, Witwer and Lee[3] reported 7 cases of this anemia which Cooley[4] later named erythroblastic anemia. They felt that the disease was an entity. Hitzrot[5] in 1928 reported 4 cases of unclassified types of splenomegaly in children. In one of these cases splenectomy was done with the above described hematologic response. This patient was followed for 14 years. In 1930 Mandeville[6] reported x-ray findings in erythroblastic anemia consisting of thickening of the medullary portion of the frontal, pariental, temporal and occipital bones with thinning of the inner and outer tables. In the early stages of the disease he found a mottled appearance of the medullary portion of the bone and later perpendicular striations of the skull with the diploë as much as four times normal thickness. In addition he noted irregular trabeculations in the pelvic bones, vertebrae, ribs, clavicles and scapulae. Thinning of the cortex was almost a constant finding in the long bones. There was no periosteal elevation and the joints were normal. He found no pathological fractures. Vogt and Diamond[7] in 1930 reported two cases treated with x-ray, without improvement. In March 1932 Baty, Blackfan and Diamond[8] reported a clinical and pathologic study of erythroblastic anemia. They found no recorded instances of hereditary transmission. The bones in their patients were filled with a dense red tissue and the marrow was hyperplastic with a predominance of erythrocytic elements. The microscopic picture of the marrow was identical to that of the marrow in a relapse of pernicious anemia. The spleen was enlarged to 3 to 7 times normal. Extensive hematopoiesis was present. There was extramedullary hematopoiesis in the liver together with extensive fatty degeneration. The lymph-nodes took part in the extramedullary hematopoiesis. In 1935 Fries et al[9] made studies of an entire family, one of whom had erythroblastic anemia. Aside from the patient with erythroblastic anemia examinations of the family, including x-ray and blood studies, were negative. In 1935 Grinnan[10] pointed out that the first definite changes in the bone occurred in the metacarpals and skull, and showed that roentgenographic findings in sickle-cell anemia and erythroblastic anemia were indistinguishable. In 1936 Nemet and Gross[11] reported a case of cardiac hypertrophy in a patient with erythroblastic anemia. The heart at autopsy was not unlike that found in any long-standing severe anemia. The nuclei of the heart fibers gave a positive reaction for iron. Whipple[12] found iron-containing pigment abundant in the liver, pancreas, lymph-nodes, gastric mucosa, thyroid and adrenals. The pigment abnormalities

were practically identical with those found in hemochromatosis. Bradford and Dye[23] found the red cell diameter increased while the mean corpuscular volume was normal or reduced. Nittis and Spiliopulos[24] thought that certain aspects of erythroblastic anemia were similar to chronic malaria. All of these patients had characteristic cranial changes, mongoloid facies and typical x-ray changes. They reported clinical and hematological cures with quinine and atabrine. Bush in 1937[15] reported a case of erythroblastic anemia in which no definite Mediterranean connection was determined. Caffey[16] in 1937 in reviewing Cooley's anemia reported long-bone changes without characteristic thickening of the skull.

Summary

Erythroblastic anemia is a chronic, progressive, familial disease characterized hematologically by numerous immature red blood cells, aniso- and poikilocytosis, low color index and leukocytosis. There is increased blood destruction to a less extent than that found in familial hemolytic icterus and sickle-cell anemia. The disease begins in the first two years of life. The patients usually have a pallid subicteric tinge of the skin. The first symptom is apt to be weakness and the first signs pallor and abdominal fullness due to splenomegaly.

After several years the patients develop mongoloid facies due to changes in the malar and orbital bones. They resemble one another more closely than they do their own brothers or sisters. The frontal and the parietal bones become prominent. There is slight generalized lymphadenopathy. The heart may be moderately dilated. There is marked splenomegaly. The liver is enlarged to a less extent. There is marked bone marrow hyperplasia and because of this there is thinning of the cortex of all the bones.

Roentgenographically the cortex is thin. Medullary trabeculae are prominent, especially in the long bones. Bony spicules extend outward from the inner table of the skull giving the appearance of hair standing on end.

There is increased icteric index and the van den Bergh reaction is indirect. Urobilin is increased in the stools and may be found in the urine. There is no characteristic resistance to hypotonic saline.

Treatment is not satisfactory and the prognosis is poor. However with splenectomy and careful supportive treatment the patient may live a fairly active and happy life.

Supportive treatment must include frequent transfusions. Splenectomy should be performed. The patient is therby relieved of the discomfort of a pendulous abdominal mass. In addition there may be less rapid fall in the hemoglobin, improved general health, decrease in jaundice, and prolongation of life. Foci of infection (infected tonsils and carious teeth) should be removed early. Quinine therapy may have some non-specific effect on the disease but cannot be expected to alter its course. However anemia develops more slowly and the patient may feel generally improved. Iron and liver have proved of no specific value.

Conclusion

A brief summary of the literature and two cases of erythroblastic anemia are reported.

Bibliography

1. Cooley, T. B., and Lee, P.: *Tr. Am. Pediat. Soc.* 37; 29, 1925.
2. Cooley, T. B.: von Jaksch's Anemia, *Am. J. Dis. Child.* 33; 786 (May) 1927.
3. Cooley, T. B.: Witwer, E. R., and Lee, P.: Anemia in Children, *Am. J. Dis. Child.* 34: 347 (Sept.) 1927.
4. Cooley, T. B.: Resemblances and Contrasts in the Hemolytic Anemias of Childhood, *Am. J. Dis. Child.* 36: 1257 (Dec.) 1928.
5. Hitzrot, J. M.: *Ann. Surg.* 88: 361 (Sept.) 1928.
6. Mandeville, P.: Radiology 15: 72 (July) 1930.
7. Vogt, E. C., and Diamond, L. K.: *Am. J. Roentgenol.* 23: 625 (June) 1930.
8. Baty, J. M.; Blackfan, K. D.; and Diamond, L. K.: Blood Studies in Infants and in Children. *Am. J. Dis. Child.* 43: 667 (Mar). 1932.
9. Fries, J. H.; Duhan, E.; and Shair, H. M.: *J. Pediat.* 2: 487 (April) 1933.
10. Grinnan, A. G.: *Am. J. Roentgenol.* 34: 297 (Sept.) 1935.
11. Nemet, G., and Gross, H.: *Am. Heart J.* 12: 352 (Sept.) 1936.
12. Whipple, G. H., and Bradford, W. L.: *J. Pediat.* 9: 279 (Sept.) 1936.
13. Bradford, W. L., and Dye, J.: *J. Pediat.* 9: 312 (Sept.) 1936.
14. Nittis, S., and Siliopulos, G.: *Am. J. Dis. Child.* 54: 60 (July) 1937.
15. Bush, G. B.: *Br. J. Radiol.* 10: 491 (June) 1937.
16. Caffey, J: *Am. J. Roentgenol.* 37: 293 (March) 1937.
17. Crawford, R., and Williamson, R.: *Am. J. Dis. Child.* 46: 565 (Sept.) 1933.
18. Cooley, T. B., and Lee, P.: *Am. J. Dis. Child.* 43: 705 (March) 1932.
19. Moncrieff, A., and Whitby, L.: *Lancet* 2: 648 (Sept.) 1934.
20. Parker, D. W.: *New England J. Med.* 208: 1147 (June) 1933.
21. Koch, L., and Shapiro, B.: *Am. J. Dis. Child.* 44: 318 (Aug.) 1932.
22. Whipple, G. H., and Bradford, W. L.: *Am. J. Dis. Child.* 44: 336 (Aug.) 1932.
23. Capper, A.: *Am. J. Med. Sc.* 181: 620 (May) 1931.
24. Whipple, A. O., and Reeves, R. J., and Cobb, C. C.: *Ann. Surg.*: 88: 380 (Sept.) 1928.
25. Wollstein, M. and Krebbil, K. V. *Am. J. Dis. Child.* 39: 115 (Jan.) 1930.

A case of pregnancy in both tubes is reported by Drs. T. J. Hopkins and R. L. Saunders, in the *Recorder* of the Columbia Medical Society.

In tuberculosis, care and personal discipline without climate are better than climate without care. *Osler.*

Pyelitis of Pregnancy*

N. Oliver Benson, M.D., Lumberton, North Carolina

IN presenting this subject I shall attempt only to give you the more recent contributions concerning this condition.

It has been shown by excretory urography that practically all pregnancies are accompanied by dilatation of the ureters. Kretschmer and Heaney found in 19 normal pregnant women with no symptoms of pyelitis, bilateral dilatation in 9 and unilateral in 7—only 3 had no dilatation. Luchs found 41 out of 50 cases dilated at different stages of pregnancy. Schumacher examined 100 women, 4½ or more months pregnant and found bilateral dilatation in 83; the other 17 revealed involvement of right kidney in 15 cases and the left in 2 cases. He also noted that in the latter months of pregnancy the changes are more pronounced in the primiparae. When the dilatation is marked, the right side is involved 3 to 4 times more than the left. Dilatation in the first half of gestation is less severe and more likely to be found in the multiparae.

The cause of this dilatation has until recently been considered due entirely to the pressure of the enlarged uterus upon the ureter as it passes over the pelvic brim. The question arose, Why does the dilatation occur in the early months before the uterus is large enough to exert this pressure on the ureters? Kretschmer and his coworkers made sections of the normal ureter and of ureters of pregnant women and found that the normal ureter contains a large amount of the connective tissue between the muscular coats. In the upper portion the connective tissue nearly equals the muscular coat; in the middle portion there is much more muscle, while in the lower portion there is a scantiness of connective tissue. Near the lower end of the ureter, there are a number of longitudinally arranged muscle fibers forming the sheath of Waldeyer, which appears continuous with the bladder, but which is the ureteral sheath or part of the ureter itself. These muscle bundles are somewhat coarser than the other musculature in this part of the ureter itself, and are separated by connective tissue.

The pregnant woman presents definite ureteral changes. In the intravesical portion there is an intense development of connective tissue, fibroblastic infiltration and groups of plain muscle fibers which present the criteria of newly formed elements. The individual muscle fibers are hypertrophied, especially where the muscle structures at the ureteral opening become attached to the mucous membrane. The portion of the ureter which is juxta vesical shows the most marked change. The ureteral sheath's thickness exceeds that of the ureter itself. The connective tissue interspersed between the thick muscle fibers makes the structure rigid. The infiltration of fibroblasts is identical with that in the new connective tissue in the lower segment of the pregnant uterus. The individual muscle fibers are broader and longer than under normal conditions and in places are spread apart by slight edema. The change in the upper part of the ureter is not very marked although there is a definite broadening of the mucosa, due to edema and to an increase in fibroblasts. In places, there is a slight hypertrophy of muscle structure. From these changes we can readily understand the frequency of dilatation of the upper urinary tract. Some believe these changes are due to a hormone or hormones, but this is yet to be determined.

There are pathological conditions that may occur in the pregnant woman as in persons generally that will cause dilatation, such as stricture, kinks, calculus, or tumor of the ureter. Such conditions may lie dormant until aggravated by the extra burden of pregnancy and the ureteral changes that accompany pregnancy.

Regardless of the cause we know that dilatation of the upper tract means an obstruction somewhere along the course of the ureter, and this means stasis of urine, either partial or complete, giving strong invitation to infection.

In a recent study Wharton examined a group of young women who had had pyelitis in infancy and childhood and found that, though the patients had no complaints, 57% had definite abnormalities in the urinary tract 10 years or longer after the last attack.

Numerous views are held as to why the right side is involved more frequently than the left. Opitz believes that it is due to a sharp kink of the ureter as it crosses the iliac artery. Herbert Sugar suggests that the cause may be angulation of the right ureter at the distal end of its juxta-vesical portion as a result of the common dextro-rotation of the pregnant uterus, while on the other hand

*Presented to the Meeting of the Fifth District (N. C.) Medical Society held at Lumberton April 6th.

this rotation tends to stretch the left ureter. John Williams maintains that there is a predominance of right-sided lesions pointing to moveable kidneys. The right kidney is normally lower and less firmly supported than the left and therefore becomes ptosed and allows for ureteral kinking.

As to the three routes of infection—hematogenous, lymphogenous and ascending—the latter is receiving the strongest support. However, you have all had cases of pyelitis that would not clear up until a focus of infection elsewhere in the body—in the teeth, the tonsils or the appendix—had been removed.

Nearly all pathogenic bacteria have been found to play a part in pyelitis. It is conceded that the colon bacillus is the most frequent offender. Bumpus and Musser believe the active cause is streptococcus, with colon bacillus a secondary factor.

Diagnosis, in the majority of cases is not difficult. The onset may be acute or insidious, depending on the amount of blockage and the speed with which the blockage takes place, and the violence of the offending organism. There is usually an elevation of the white count. The temperature may go as high as 104 and is accompanied by chills. Pain and tenderness in one or both costovertebral angles is a consistent symptom. The pain at times radiates down the course of the ureter or to the lower lumbar region, more often it is confined to the area over the involved kidney. Pus in the vaginal secretion which contaminates voided urine is indistinguishable from pus from an infected urinary tract. It is not always convenient to catheterize a patient each time we desire a specimen, so what is the next best procedure? I have found it very satisfactory to have the patient cleanse her exterior genitalia with warm water, keeping the labia apart, then to void into a clean container before allowing the labia to come together. I have checked this method against a catheterization in the same patient and have found both specimens gave the same laboratory findings. Rarely the urine will show no pus cells, due to a complete obstruction of the ureter on the infected side. In this condition a urological examination is necessary to make a diagnosis.

Complications or extensions of the pyelitis as pyelonephritis, pyonephrosis and perinephritic abcess are recognized by the symptoms produced on involvement of the kidney substance proper. These complications rarely if ever occur in cases in which adequate treatment is instituted early.

When we have made the diagnosis of pyelitis, our next step is to determine the offending organism if possible. It is upon this finding that we determine the type of oral medication to be given. Let me give you a rule that I have found to be consistently accurate. The results obtained from oral medication indicate to a definite degree the amount of obstruction present.

Many urinary antiseptics, as methylene blue, salol, hexylresorcinol and pyridium, have been more or less discarded in favor of urotropin, ketogenic diet, neoarsphenamine, mandelic acid and sulfanilamide. Of this latter group the last three are effective in most urinary infections—sulfanilamide acts favorably on a *B. proteus* and *B. cloacae* infection; mandelic acid on *Streptococcus faecalis*. The effect of these two drugs on the colon bacillus infections is equally favorable, while neither is very favorable in staphylococcic infections. Since both of these drugs are equally effective in infections by the most common invader (colon bacillus) we are fortunate, because if one drug is not tolerated by the patient the other can be tried, also one acts in an acid medium and the other in an alkaline. This is indispensable at times when one cannot alter the reaction of the urine. We now have under control all but the staphylococcus, which is a frequent invader in pyelitis. However, strains of staphylococcus are acted upon specifically by neoarsphenamine by vein.

Treatment other than urinary antiseptics is soft, bland diet, fluids freely, hot-water bottle to affected kidney, daily bowel evacuation, general sedatives and urinary sedative if bladder symptoms arise.

If we have given our oral treatment a fair trial and our patient is not improving or is getting worse, then we must turn to catheter drainage for help. If possible the cause of the obstruction should be determined, and treatment carried out to meet the necessities of the individual case. In the average case of pyelitis with no pathological blockage the effect of catheter drainage is usually a normal temperature and a comfortable patient in 24 hours. Some cases require catheterization at intervals throughout the pregnancy. However many severe cases of pyelitis starting as early as the 4th or 5th month may be treated by repeated catheterization in conjunction with the previously outlined treatments, and the pregnancy go on to its natural conclusion.

The question arises: will cystoscopy ever cause the patient to abort? Yes, but very rarely. Those patients with an unrelieved ureteral obstruction are much more likely to abort than are the group of patients who are treated cystoscopically.

If the patient does not respond to any of the treatments outlined, then a therapeutic abortion is justifiable, for a continuation of pregnancy may bring death to fetus and mother.

Summary

1. Dilatation of the upper urinary tract occurs in almost all pregnant women.
2. This dilatation is due to hyperthrophic changes in the ureter itself, mainly in the lower portion.
3. The cause of the right side being involved most frequently is still unsettled.
4. The ascending route of infection is at present receiving the most support.
5. Specimens for examinations should be obtained by or otherwise so as to prevent vaginal contaminations.
6. Determine if possible the causative organism.
7. Oral treatment by the newer drugs according to type of invading bacteria.
8. Cystoscopic manipulation for diagnosis of complicated cases, and treatment of resistant cases.
9. Therapeutic abortion as last resort.

Men are Better Cooks. A Thousand Ways of Serving Curry—Eating is an Art.

(Lt.-Col. R. S. Weir, in *Indian Medical Record*, Apr.)

For 2,000 years mankind suffered from a class with the slogan, "Plain living and high thinking"; a class noted for what they termed "learning". They extolled the virtues of the mind as opposed to the virtues of the body. With more and more emphasis being laid on brain and soul, people grew almost ashamed of having a stomach; while cookery suffered, volumes on mysticism and theology multiplied. Brighter days have dawned. The days of the philosopher and the ascetic are gone. You no longer make people gape and say, "How wonderful," when you wrap up a sentence of nonsense in jargon. The claims of the priest to control what we shall eat and drink are rightly ignored. The slogan of the future is, Focus on Food.

There are three aspects of Food—the Viands themselves, the Cooking and the Serving—all important. I have always been ready to try any drink or food once.

To millions in India the egg or food containing eggs is anathema. The whole of European cookery is based on the egg. There is a French book called, "One thousand ways of serving eggs."

In western meals one starts off with hors d'oeuveres—the stuffed olive, the sardine or anchovy, the pickled walnut, caviare and so on. Then soups. No English dinner misses soups, soup which appears in Alice in Wonderland:

"Beautiful soup so nice and green,
Waiting in a warm tureen."

Every country has its national dish. England has its roast beef. Austria its schnitzel. France its omlette. My own country rejoices in three—the haggis, porridge and whisky. India in her turn is renowned for curry, kabak and chutney and just as Burns composed the poem—

"Fair for thy honest sausy, face
Great chieftain of the puddin race."

so I hope that some poet of India may sing the virtues of curry. If France can serve egg in 1,000 ways, so India can produce 1,000 varieties of curry. I am told that the egg curry is a polite indication to a guest that it is time he take his departure. The hospitality of the house runs dry when the curried egg appeaars. I need not praise the game birds of India—the duck, snipe, quail, geese, partridge or even that bird reserved by the Romans for the highest in the land—the peafowl. The vegetables of India do not rank so high. Potatoes, to be much used, have to come from the hills, and I do loathe the railway car dinner vegetable of pumpkin or vegetable marrow—like taking a mouthful of fog.

One item of an Indian dinner without which you cannot dine—the chapatty, takes the place of bread and potatoes and is nicer to eat. The poori, also in various guises, puffed up or stuffed, hot or cold. My little daughter, when told she was going home to school, asked, "Will I get dal poories"? "No", I said, "No dal poories in England." "I won't go", she replied.

Prohibition will never make great headway in India for India is abstemious. Toddy and country beer do not appeal to me. Wine making is not an industry of India although white scented Persian wines are rare and interesting.

Golden of skin, the stone thin as a pencil, wonderful in flavour, the mango is the fruit of India which I shall miss. Lichis from Dehra Dun I like. Luquats and sharifas. Kulu sends delectable apples and oranges (the mitha santara) of the plains are not to be despised.

Several things retard the progress of cooking in India. First it is left to women. I do not care what you say about the wonderful dishes mother used to make, the best cooks are men and till men seriously take up the culinary art, cooking must stagnate in India.

Pediatric Program

(From Page 315)

development without crowding. A gradual introduction of new foods will provide variety and interest throughout many months and will prevent many feeding problems and and much allergy.

At the 9th month I give the infant his first injection of diphtheria toxoid (1 cc). This should not be given earlier because most infants carry over a natural immunity until this time, and early artificial immunization will result in a higher percentage of failures. The alum-precipitate toxiod produces too much pain and too many nodules. The percentage of subsequent negative Schick tests is only about seventy-five.

At 10 months almost all of my infants have tripled their birth weights and are able to stand. A delay in development must be carefully investigated.

At 11 months the second injection of diphtheria toxoid (1 cc) is given. After two months a Schick test must be done. With two injections of toxoid at two or three per cent of the infants will show a positive Schick test. A third injection of toxoid will usually produce a negative test.

At one year the child is re-examined for normal growth, development, and nutrition. He should walk, say a few words, and have good coordination. A urinalysis should be done. The mother is now advised to have the smallpox vaccination and the Schick test repeated every five years. The child is now given more solid foods and three meals a day. The mother is advised to return every three months for the second year and every six months thereafter.

Attention is now directed to posture and feet. Fatigue posture is corrected by prescribed exercises. A tendency to flat or pronated feet is treated with corrective shoes and later with foot exercises.

During this entire period of prevention and periodic examination the mother is instructed to bring her problems to her family doctor. If he has been thorough she will do so. New ideas, newspaper campaigns, food fads, new or advertised immunization programs will be first presented to the child's doctor where they belong. It is of much greater value to the child and his family that a record of the child's immunizations shall be kept on file in the doctor's office than for statistics to be accumulated in the city hall.

Spinal Myelography*

R. H. Lafferty, M.D., and O. D. Baxter, M.D.,
Charlotte, North Carolina

SEVENTEEN years ago Sicard and Forestier, of Paris, injected an opaque oil (lipiodol) into the spinal subarachnoid space in an effort to demonstrate filling defects produced by tumors in this region. Since that time the procedure has been greatly improved to the point that many partially obstructing tumors can be easily demonstrated. This method has been used with increasing frequency in the last five years, due, in most part, to the fact that uncontrolled sciatic pain may be the result of prolapse of one or more of the intervertebral disks. This condition, as recent studies have proved, is relatively prevalent..

This paper presents the roentgen findings in twelve patients examined in the x-ray departments of the Charlotte Sanatorium, the Presbyterian Hospital and St. Peter's Hospital, in Charlotte. While the number of cases is too small to be of much statistical value, the indications for and technic of the procedure have been definitely established.

Technic

A preliminary stereoscopic anteroposterior and lateral view of the lumber and sacral spine are always made. Although most of these films will show no deviation from the normal, at times narrowing of the intervertebral space, with or without bone formation, the defect of a Schmorl's node, or a widening of the interpedicular space may be demonstrated. A change in the normal lumbar curve is a more common finding when that portion of the spine is involved. On the lateral view the normal curve is lost, the spine being straight or slightly kyphotic. As all of our patients presented symptoms pointing the lower thoracic and lumbar regions, this discussion will be limited to the findings in this area. Except when the spinal canal is completely blocked, spinal myelography is absolutely necessary for accurate localization.

Five c.c. of the opaque solution is injected into the spinal canal subarachnoid space. If possible the puncture should be made below the lesion for manometric readings for patency of the spinal canal; it should always be near the site of the disease or injury so that spinal fluid studies for nerve-root irritation may be accurate. If the latter has been done previously the puncture may be done at the most convenient point, usually between the third and fourth lumbar vertebrae.

We rarely observe the patient on the day of injection. We have found that examination on the second to sixth day has been more satisfactory both from the patient's and the observer's standpoint. Most patients will experience a definite increase in symptoms for 24 to 40 hours after they have received the lipiodol, and after this time not only does the canal show better filling but the solution is maintained in a single mass and can be flowed up and down more satisfactorily. The entire examination is done on the flouroscopic table which should be of the continuous tilting type. A motor-driven table is the most convenient. We use a Lysholm Grid for both fluoroscopic and radiographic studies. The patient is placed in the prone position and with the fluoroscope the oil is located; the foot of the table is then slowly lowered until the solution fills the lower end of the dural sac (about opposite the second sacral segment). If normal, the space will be filled from about the middle of the body of the fourth lumbar to the second sacral segment. The head of the table is then lowered and the solution is allowed to flow up to about the fourth thoracic vertebra. If filling defects are noted the table is manipulated slowly to the point where the solution puddles with the defect in the center. A film is then placed on the Lysholm Grid and an exposure made, using the same technical factors as for the fluoroscope. The patient is left in position while the first film is developed. If the shadowgraph is satisfactory, the foot of the table is lowered slightly and the right hip is rotated backward about 35°—the right posterior oblique position. The table is again manipulated to the point where the solution puddles with the defect in the center and another film is exposed to the rays. Other films are made with the patient in the left posterior oblique and the lateral positions. The patient is then turned over with the back down and the same procedure repeated. In our experience the lateral and supine positions rarely show the defects. Raising and lowering the table slowly is emphasized as the best method of maintaining the lipiodol in one mass. It is necessary at times to place pads under the hips and or chest to satisfactorily puddle the opaque solution at a given point. For instance, if the lumbar spine

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

has lost its normal lordotic curve and is straight or slightly kyphotic, it is impossible to obtain any position that will maintain the solution in a compact mass by simply tilting the table. This examination requires about 45 minutes and is repeated at least three times before a final diagnostic report is made.

The findings in the 12 cases were as follows: Prolapsed disks—5, ligamenta flava—2; multiple intramedullary new growth—2; single extramedullary new growth—1; arachnoiditis—1; negative findings—1.

Case Reports

Case 1.—White man, aged 20, son of a physician. Two-and-a-halt months before admission he developed slight pain across lower back. This gradually increased. A month later he noticed numbness in calf of right leg which now extends to the groin. Pain has disappeared. There is definite loss of coördination in muscles of right leg and thigh. Cannot drive car and walks with limp and list. Symptoms progressive.

Neurological findings by Dr. R. F. Leinbach:—Slight paresthesia along distribution of lumbar three and four, left side. The corresponding area on the right side shows impaired sensibility to pain and light contact. Vibratory sensibility entirely lost over right knee and foot, feeble anal reflex on right side. Romberg and Queckenstedt signs positive. Spinal fluid total protein 78 mgm. per 100 c.c. Preliminary x-ray examination is negative. Myelography:—On a level with the upper border of the first lumbar vertebra the solution meets obstruction. At no time during several observations were we able to flow any solution past this point. The upper margin of this shadow is slanted but does not show the characteristic concavity. Impression (Dr. Leinbach)—Extramedullary tumor on right posterior lateral aspect of cord, opposite 11th and 12th thoracic vertebrae. Laminectomy done by Dr. C. C. Coleman of Richmond, with removal of an extradural tumor on the right posterior aspect of cord, opposite 12th thoracic.

Case 2.—A woman, aged 36. A month before admission she developed a stabbing pain in the lower back and down the anterior aspect of both legs, required opiates. These spmptoms persisted . Four days after admission she developed signs and symptoms of a transverse myelitis localized at 12th thoracic. The acute condition cleared but the neurological findings changed very little.

Neurological findings by Dr. Elias Faison:—At level of umbilicus there is hyperesthesia. Complete paraplegia from umbilicus down with complete loss of cutaneous and deep sense. All reflexes lost in this area. Patient unable to void. Queckenstedt positive, total protein 300 mgm. per 100 c.c. blood. Preliminary x-ray examination shows narrowing of the space between the bodies of the 4th and 5th lumbar with new bone deposits. Myelography shows a bilateral filling defect at lumbar 4 disk. About two months after our examination she was referred to Dr. Ed Fincher of Atlanta, who found neurological changes from the 4th lumbar segment down. There was definite bladder residual and he also observed a filling defect between the 5th lumbar and 1st sacral. He writes "on December 22 we carried out a lumbar laminectomy under spinal anesthesia, removed a herniated nucleus pulposus between lumbar 4 and 5, and on checking up we found also a second one between lumbar 5 and sacral one. The more inferior one was not so large and I do not believe it was doing as much damage as the other one, but owing to her loss of motor control I feared that a complete herniation might occur and with very little additional surgery it was removed." The patient has returned to Charlotte and is slowly but definitely improving.

Case 3.—White man, aged 38. Twelve years ago sustained a back injury in an automobile accident but recovered from all symptoms. Seven months ago he strained his back while bowling. Since that time, except for short intervals, he has had marked spasm of muscles of back to the degree of opisthotonos. Pain and spasm were controlled only by opiates. On admission he had developed numbness and cramping in the left leg and foot. Queckenstedt negative, spinal fluid protein 60 mgm. per 100 c.c. blood. Preliminary x-ray examination was negative. Myelography—Persistent filling defect opposite the disk between the 11th and 12th thoracic vertebrae. The defect remains constant in all positions except the lateral. Laminectomy and removal of a markedly thickened ligamentum flavum was done by Dr. Stuart Gaul. The enlargement was on the left side. In less than a month the patient was attending to his duties as manager of a wholesale bakery. No spasm or numbness since operation.

Conclusion

1. Spinal myelography is a safe and useful procedure.
2. Any abnormality which impinges on the subarachnoid can be demonstrated and localized. In many partial obstructing lesions it is the only method of localization.
3. And probably the most important, most of the lesions, particularly extramedullary new growths, hypertrophied ligamentum flavum and herniated nucleus pulposus (prolapsed disks) can be removed surgically and the patient restored to a useful and normal life.

Discussion

Dr. J. G. Lyerly, Jacksonville, Fla.:

I enjoyed listening to this paper on myelography and the diagnosis of different surgical lesions of the spinal cord.

Lipiodol has come to be used freely, not only by neurological surgeons and neurologists, but frequently by men in other surgical specialties. It is chiefly indicated when there is a space-encroaching lesion in the spinal canal such as tumor or displaced intervertebral disc. There are several objections to lipiodol in that it is a foreign body which is never entirely absorbed but remains in the spinal canal indefinitely. At operation it may be partly removed by drainage. However, it seems to cause no harm if left undisturbed. It is essential in diagnosis of some of the doubtful cases of tumor or dislocated disc as there is no other contrast medium which gives such a clear outline on the x-ray film.

I have used oxygen gas or air in the spinal canal with the hope of getting a clear-cut outline for diagnosis of lesions projecting into the spinal canal, but usually with unsatisfactory results. I think it is important that these patients have a thorough neurological examination and diagnosis made from the clinical findings if possible. Many of these cases can be diagnosed from the clinical standpoint and be operated on without lipiodol studies. If lipiodol is used it is preferable that the patient be operated on as soon as possible afterwards and have it drained out.

Dr. F. E. Kredel, Charleston: I would merely like to say a word on two objections that are sometimes raised against myelography. The hesitancy of most of us to perform a cisternal tap need not be a barrier, since in-

jection can be made by the lumbar route in almost every case. Even if the lesion is high up, you can tilt the patient and let the oil run up. The temperature of the oil should be regulated very carefully. There is a temptation to heat the oil too much, for it is quite a job to inject this viscous material at room or body temperature. But burning the spinal cord with hot oil is contraindicated.

DR. O. D. BAXTER, closing:

Dr. Lyerly and Dr. Kredel have brought out some very important points.—Our presentation was primarily from x-ray findings—not a neurological study. Fortunately the results when the lesions are in lumbar regions are more satisfactory than in those higher up. We are much surer of ourselves if it is below the twelfth dorsal vertebra. All such cases should have the benifit of neurological study.

JOHN HUNTER AND HIS MASTERPIECE

(K. F. RUSSELL, Melbourne, in *Australian & New Zeland Jl. of Surg.*, April)

John Hunter, that very human Scotchman who did much towards making the craft of surgery into a science, thereby raised the status of its exponents. As one of his contemporaries said: "He alone made us gentlemen."

Hunter in July, 1771, married the eldest daughter of Mr. Robert Home, surgeon to Burgoyne's regiment of light horse, thereby gaining as brother-in-law Mr. Everard Home.

After Hunter's death in 1793, his collected manuscripts were at some upknown subsequent date burnt by Home, his brother-in-law, who acted as Hunter's executor together with Dr. Baillie.

The following contemporary notice appears in a volume printed in 1826, entitled "A Corrected Report of the Speeches Delivered by Mr. Lawrence as Chairman at Two Meetings of Members of the Royal College of Surgeons":

We now learn, for the first time, in an official form, the disastrous intelligence that Mr. Hunter's manuscripts have perished; that they have been wilfully and deliberately burned by his brother-in-law and executor Sir Everard Home. Our regret for this irreparable loss is heightened by learning that the manuscript lectures, which Mr. Hunter read to his class were involved in the destruction, and that the writings were altogether so extensive that 10 volumes in folio on the anatomy of animals and vegetables are spoken of only as forming a part. A promise made to Mr. Hunter, to burn all his manuscripts is alleged in justification of this act, so injurious to the cause of anatomical and physiological science, and so detrimental to the important national collection, which the perpetrator was more especially bound to watch over and protect; not only from respect to the memory and fame of his deceased friend and near connection, but from regard to the interests of science, and in execution of his duty as one of the Curators of the Museum. The Council observe that Mr. Hunter considered these books to be valuable, and not otherwise than creditable to himself, may be inferred from three of them having been placed on the table beside him, when his portrait was painted by Sir Joshua Reynolds.

That Home burned an enormous quantity of material is to be inferred from the fact "that the escape of burning fragments from the chimney caused an alarm of fire, in consequence of which the dwelling of Sir Everard was actually entered by the firemen."

During the years 1814 to 1828 Home published a 6-volume work entitled "Lectures on Comparative Anatomy", and in this discussion of his action two very pertient questions were asked: "Was the destruction of these papers perpetrated before Sir Everard Home had completed his own volumes on Comparative Anatomy, and furnished his numerous contributions to the Royal Society?" "Were any of the destroyed papers on the subjects which Sir Everard has treated of?" It would seem not unlikely that Home actually did pirate John Hunter's work and publish it as his own.

One of his experiments is worth quoting completely for in it he discovered the alteration of the sedimentation rate of the red corpuscles in inflammatory conditions. This was rediscovered and put to its modern use by Fahraeus (1918-1921), Linzemeier (1920) and others. The fact that it was John Hunter's discovery has not been fully realized.

As inflamed blood leaves a portion of the coagulating lymph, 'free from the red globules at the top, and as that can be accounted for upon the principle of coagulating lymph, in such cases not coagulating so fast as when the blood has not this appearance, and as the coagulating hinders any comparative experiment respecting the weight of the red globules of each, I tried to see if they sank in serum faster in one kind of blood than in the other; I took the serum of inflammatory blood, with some of the red part, and also some serum of blood free from inflammation, with nearly the same quantity of the red part; they were put into phials of the same size; I shook them at the same time, then allowed them to stand quiet, and observed that the red globules subsided much faster in the inflammatory blood than in the other. To ascertain whether this arose from the red globules being heavier, or the serum lighter, I poured off the serum from each, as from red blood as possible, then put the red part of the one into the serum of the other, and shook them to mix them well; and upon letting them stand quiet, the red globules appeared to fall equally fast.

It will be remembered that in 1767 Hunter inoculated himself with syphilis in order to study the effects of the disease and its cure. Although he himself thought that he had cured the condition, it would appear from the account of the *post mortem* examination that it was the cause of his death.

The aorta immediately beyond the semilunar valves had its cavity larger than usual, putting on the appearance of an incipient aneurism; this unusual dilatation extended for some way along the ascending aorta, but did not reach so far as the common trunk of the axillary (subclavian) and carotid arteries. The internal membrane of this part had lost entirely the natural polish, and was studded over with opaque white spots, raised higher than the general surface.

There was evidence of previous corronary thrombosis in the form of fibrous patches in the ventircular walls, the coronary arteries were calcified, the aortic valves "had lost their natural pliancy. . . . . and in several spots there were evident ossifications."

MIGRAINE

(W. C. ALVAREZ, Rochester, Minn., in *Wisc. Med. Jl.*, June)

What bothers me is that nowadays when a patient with severe migraine starts going to clinicians, she is usually put through one long and expensive overhauling after another. In every office the physician promises to go to the bottom of the matter so as to find "the cause of the disease" in some focal infection or glandular disturbance. I feel sure he will not find it because it is becoming ever clearer that migraine is a definite entity, a disease by itself, based on a hereditary peculiarity which has its site either in the brain or in the autonomic nerves regulating the circulation of the brain. As I often say to a much-traveled patient: "I will go all over you again if you wish, but even if I should find some gallstones, I would not expect their operative removal to help you. I have never seen migraine cured in that way." I feel about migraine somewhat as I feel about measles; when I see a child with measles I know well enough what the trouble is, and it doesn't occur to me to go hunting for the cause in thorax or abdomen.

SEVERE scratching about the neck and shoulders may well lead the doctor to think of body lice.

PLASTER OF PARIS bandages were first introduced, in 1878, by Mathyson, Belgian army surgeon.—*Ill. Med. Jl.*

Clinic

Conducted By
Paul F. Whitaker, M.D.
Kinston, N. C.

Clinical Pre-Clinical Conference

March 14th, 1939

An attorney 48 years of age was first seen Jan. 6th. 1937, with a chief complaint of gas on his stomach and fullness after eating of four years duration. To begin with the symptoms were felt only occasionally, but for the last year almost constantly. After eating he felt distended, eructated a sour material and passed considerable gas by bowel. At times he had a gnawing, burning epigastric pain which was relieved sometimes by taking soda or food. Two weeks before consultation he ate heavily of barbecue.

Two hours later he was seized with a sudden, severe epigastric pain which radiated around the margin of the ribs on the right and into the shoulder. Induced vomiting gave no relief. Two ounces of paregoric finally gave relief. Since this attack he had eaten practically nothing but milk and crackers. Any other food, particularly fried or greasy food, caused severe gaseous dyspepsia and at times pain. The bowel function was good, he had never been constipated, or jaundiced; occasionally he suffered from piles.

He had postnasal dripping very frequently, particularly in the early morning. He had slight tachycardia if he became excited. He had had an occasional frontal headache which he thought was due to eye strain. The patient had had malaria and influenza, and an empyema in 1908 for which he had a rib resection. He suffered a ruptured appendix in 1916 and an appendiceal abscess was drained and the remaining portion of the appendix was removed. A tonsillectomy was performed seven years ago and four years ago he had a submucous resection of the nasal septum and uncapping of the ethmoid cells. He had indulged moderately in alcohol and smoked an average of twenty cigarettes a day. His domestic relations were happy.

The family history revealed nothing of importance. A good thoracotomy scar was present in the right posterior axillary line. Expansion was moderate and equal on both sides, breath sounds around the area of the scar were somewhat distant. Heart rate and rhythm normal, no murmurs, muscular element well preserved, apex in normal position, response to exercise normal.

There was definite tenderness in the upper right abdominal quadrant made worse by left lateral posture, and tenderness in the right costovertebral angle. Cutaneous hyperesthesia was elicited in the upper right quadrant. The liver, spleen and kidneys were not palpable. The McBurney scar was in good condition.

Further examination, including neurologial and rectal, disclosed nothing suggestive. Tonsils had been removed cleanly. Blood pressure 118/70. The white cell was 7,500—74 polys, 2 large lymps., 17 small lymphs., 2 endoths., 4 eos. and 1 baso. Red cell count was 4,460,000, hemog. 90%, color index 1.02%. Malaria parasites and Wassermann negative. Blood urea was 18 mg. and sugar 100 mg. per 100 c.c. The sedimentation rate was 31 mm., icterus index 7.5 mg. per 100 c.c. of blood. Gastric contents total acidity was 10, 38, 48 and 50, free HCl 4, 28, 36 and 46, blood and lactic acid negative in all specimens. Duodenal aspirate: a free flow of dark static bile, which showed calcium bilirubinate crystals. (The patient had a severe momentary abdominal pain in the region of the upper right quadrant during the drainage). Morning, noon and night urine showed sp. gr. of 1020, 1014 and 1008 respectively, all acid and negative for albumin and sugar and on microscopic examination. Basal metabolic rate was plus 9%.

X-Ray Examination by Dr. Oehlbeck: Esophagus and duodenum negative, some regurgitation of barium into the lower esophagus was noted on fluoroscopy and on one film (cardiospasm). The stomach emptied normally. After oral administration of the dye the gallbladder was readily visualized. Four small irregular shadows were visualized within the gallbladder shadow, indicating the presence of stones. After a meal of fats, the gallbladder emptied, showing good function.

Discussion: Indigestion over a period of four years; the acute attack of pain in the upper right quadrant after a fatty meal two weeks before and the tenderness in that area noted on physical examination, pointed to cholecystitis. The finding of calcium bilirubinate crystals in the duodenal aspirate indicated gallstones. X-ray examination confirmed the diagnosis.

Treatment: After proper preparation under gas-ether anesthesia the gallbladder was removed by Drs. Wooten and Cranz. The patient made an uneventful recovery and in six months time was practically free of indigestion, though he still does not tolerate fatty foods.

Comment: Gallbladder disease is the most common single cause of chronic digestive disturbance. Therapy is both medical and surgical and each case demands individual consideration in the decision as to its therapy. Biliary drainage, particularly if cholesterol or calcium bilirubinate crystals be found, is a valuable diagnostic procedure.

Surgical Observations

A Column Conducted by

THE STAFF OF THE DAVIS HOSPITAL

Statesville, N. C.

TESTOSTERONE PROPIONATE in the TREATMENT OF PROSTATIC CONDITIONS

MANY patients in need of surgical treatment of the prostate gland are deficient in the male sex hormone. That the male hormone deficiency exerts profound influence upon the patient is a fact that should be taken into consideration.

For some time we have treated these patients with testosterone propionate, using Perandran (Ciba) which we have found most satisfactory.

During the period of preparation for any type of operation on the prostate gland and where a careful study of the patient indicates a deficiency of male hormone, the administration of this preparation has aided greatly before and after operation. In some cases the improvement has been striking, promoting and hastening recovery, especially in those cases where there is mental depression or tendency to melancholia and premature senile changes generally.

In all cases, the drug has been given cautiously. We have used perandren, which is testoterone propionate dissolved in oil of sesame and given by inunction.

We have found in most of these patients a definite improvement in the body function generally. The patient takes a greater interest in life and has a brighter outlook on life. The improved mental condition and attitude facilitate a return to good general health, especially in those cases that have dragged along over a long period of time.

In cases where there is any doubt as to deficiency of the male hormone a therapeutic test is available, and it can be carried out without difficulty and with no danger of harm to the patient.

The dosage varies from five to twenty-five milligrams. In most of these patients we have given small doses at first. At little as five milligrams two to three times weekly may be sufficient. In most cases, however, we have given ten milligrams twice weekly, watching the patient closely in the meantime.

In administration of testosterone propionate in cases where there is a very low basal metabolism rate, the administration of thyroxin is of distinct benefit as an adjunct. One of the actions of testosterone is to inhibit the action of the anterior lobe of the pituitary gland and this should be kept in mind in determining the dosage and watching the patient closely for the action.

According to Wolf, the stimulation by the anterior lobe of the pituitary gland causes the secretion of testosterone by the testes. Prolan-A is supposed to act especially upon the cells of the seminal tubules and to increase spermatogenesis. Prolan-B affects the interstitial cells and consequently the sex characteristics. The adrenal glands are also supposed to take a part in this.

In prostatic cases where there is a deficiency of the male hormone, the administration of testosterone propionate in the preliminary treatment has aided greatly in building up the patient's strength and in clearing up the bladder condition which is so often associated with hypertrophy of the prostate gland, especially where it has been present for a considerable length of time. This, combined with the other treatment which is usually given, aids greatly in preparing the patient for operation and when continued after operation is certainly a definite help in aiding the patient's recovery.

EXSTROPHY OF THE BLADDER

EXSTROPHY occurs, fortunately, very rarely; but when it does occur it is a tragedy for the individual. Where it is possible to do an anastomosis between the ureters and the lower part of the large bowel this is the treatment of choice; that is, where no plastic operation can be done to restore the bladder.

If the condition is allowed to go on until the patient reaches adult life, it is often too late then to do an anastomosis between the ureters and the large bowel, because of the fact that ureters are dilated so much that anastomosis would be followed promptly by infection of the whole upper urinary tract. To transplant a ureter directly into the intestine without formation of a properly placed valve would result in an ascending infection which would soon destroy the kidney, or if both ureters were transplanted would destroy both kidneys.

Coffey is due much of the credit for the development of a satisfactory operation for this purpose.

The essential technique requires the ureter to pass between the mucosa and the muscularis for a certain distance before it discharges into the bowel. This forms a very satisfactory valve and without this the operation would be a failure.

In every case of exstrophy of the bladder the patient should be placed under treatment at the earliest possible time. Delay may mean that the ureters would become enlarged to a point where anastomosis would do more harm than good and, at the same time, result in impairment of the kidney function, which would contraindicate any further surgical procedure. Certainly the results have been very satisfactory.

DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

OF DIPLOMACY

THE Honourable Kensuke Horinouchi, Japanese Ambassador to the United States, has lately been a visitor to Richmond. He came, a humorless press report informs the world, as a guest of one of the great Christian churches of the city. The pastor of the church met him at the station. The Ambassador of that amiable and candid people was feted by the church, of which he was a guest, and he spoke later to the members of the congregation. His expressed purpose in coming to the United States, as the ambassadorial representative of his people, was to help in establishing a basis of permanent understanding between his people and the people of our own country. But he is troubled by so much talk about war by the people of the United States. He cannot understand their bellicose talk, and he feels that such talk is not only unjustified but that it tends to disturb the amiable relationship existing between the Japanese and the people of our own country. The Oriental Ambassador thinks the people should talk about other things than war so that peace may continue to reign in the Orient and elsewhere.

It must distress the representative of so serene and peace-loving a people as the Japanese to discover here in Richmond that our people are entertaining the unhappy delusion that the people of his own country are carrying on a war. If people continue to talk about warfare and to feel apprehensive about the possibility of war, some unhappy incident may occur that will cause even the Japanese people to turn their eirenic minds away from contemplation of continuing peace in the Orient.

The Ambassador from the Emperor of Japan to the President of the United States is himself a communicant of the great Christian body to one of whose churches in Richmond he came lately as a guest. One of the doctrines of that body of believers insists upon personal freedom in religion and in civic life. One wonders if the Japanese Ambassador when he is at home discusses that philosophy with his Emperor, and if he advocates peace so stoutly when he is at home in the Orient as when he is visiting in Richmond. Perhaps he should be transferred to China. The war-loving Chinese are those to whom the Honourable Kensuke Horinouchi, at present Ambassador from Japan to the United States, should speak in praise of peace. If the destructive and cruel invasion of Japan by the Chinese hordes could only be brought to an end there might be some hope of peace in the East and elsewhere in the world. We people here in our own United States are at peace with each other and with the peoples of the world. There have been few evidences of discord here between capital and so-called labor, and the people of the United States have for several years furnished Japan with less than half her naval and military supplies. We and the Japanese are too busy with other things to have either the time or the inclination to indulge in thought about war. Let the Japanese Ambassador direct his serene speech to the bellicose Chinese, and teach them about the virtue of pacifism and of peace.

Is diplomacy either definable or comprehensible? Is the Honourable Kensuke Horinouchi a humorist, like the late Ah Sin?

UROLOGY

For this issue, SAMUEL J. SINKOE, M.D., Atlanta

SULFANILAMIDE THERAPY IN GONOCOCCAL INFECTIONS

THE treatment of gonorrhea has always been a baffling and puzzling problem due to the fact that we are dealing with an organism which has been difficult to destroy, because of its penetration into the glandular structure of the urethra and its extension by contiguity. Complications have been numerous, and in many cases the disease has run a protracted course lasting for several months. Posterior urethritis, epididymitis, or an acute prostatitis has developed within a comparatively short time following the onset of the infection. The involvement of the glandular structure of the urethra, comprising the glands of Littre, the crypts of Morgagni and Cowper's glands has added to the chronicity of this disease. The presence of an arthritis or endocarditis in the course of a severe gonococcal infection emphasizes the destructive power of the organism, particularly if the patient is run-down, and has lowered resistance.

Long and Bliss reported their clinical work with sulfanilamide in the treatment of betahemolytic streptococcal infections. Its use was also suggested in the treatment of meningococcal and gonococcal infections. They have shown that this drug decreases the rate of multiplication of invading organisms in the host. When this rate is decreased, there is a decrease in the production of toxic substances which ordinarily overwhelm the infected animal. Due to inhibition of growth of the bacteria, the phagocytes are able to clear the tissues of the invading microörganisms.

Sterilization of the infected urinary tract depends, therefore, upon the concentration of sulfanilamide in the urine. It has been shown that this drug diffuses rapidly from the blood into the tissues. It is believed that the component parts of the urinary tract are constantly bathed with urine containing a heavy concentration of sulfanilamide, and this factor is perhaps responsible for its effectiveness in urinary-tract infections.

Following the report of Dees and Colston on the surprising effect of sulfanilamide in gonococcal infections, I immediately instituted this form of therapy in the treatment of my cases. At the same time, I continued my usual routine local treatment. In this way I have been able to more carefully check the effect of the drug, as well as watch for any complications which might arise. I am convinced that the combined method of treatment is superior to the method in which only the drug is administered. Written instructions are given to the patient regarding diet, abstinence from alcoholic drinks, sexual excitement etc.; he is instructed to abstain from all saline laxatives, and to report immediately any unusual sign or symptom, *e.g.,* jaundice, skin eruptions, bluish discoloration of the lips and nails. Potassium permanganate irrigations, 1-5,000 under low pressure are given daily, followed by urethral instillations of two drachms of 0.5% protargol solution, or 10% neosilvol solution. At the same time, the patient is instructed as to the use of the urethral syringe and to inject the medication himself at night just before retiring. He is instructed to void prior to injecting the medication, which is retained for three minutes. Every patient receives a careful examination, and if a pinhole meatus or marked phimosis is encountered, appropriate corrective procedures are carried out. If the condition is very acute, and there is swelling and edema, complete rest is ordered. No local treatment is given until the acute symptoms subside. At the same time, rest in bed, local applications of hot wet dressings and hot sitz baths are prescribed. Internal medication with sulfanilamide is immediately instituted, and the effects carefully observed. At each visit the urine, which is voided into two glasses, is examined for pus and pus-shreds, particular attention being paid to the appearance of the second glass for possible posterior involvement. If the latter occurs, treatment is immediately directed to the posterior urethra. As soon as the gonococci disappear, the silver salts are discontinued and, instead, only daily permanganate irrigations are given. When the discharge becomes very scant, astringent solutions are prescribed. Silver nitrate in strength of 1-10,000 to 1-1,000 is often used in this stage.

My clinical evaluation of this drug is based on a series of 100 office patients who were given the combined treatment—internal medication with sulfanilamide combined with my usual method of office therapy. Of the 100 patients so treated, 95 are adults and five children. Of the 95 adults, 85 are men and 10 women. Of the five children treated, two are boys and three are girls. It was impossible to follow regularly the dosage recommended by Dees and Colston. I have, however, obtained excellent results beginning with 60 grains daily in four divided doses for the first two days, and thereafter 40 grains daily, gradually reduced until discontinued entirely. The patient is also advised to take 20 grains of bicarbonate of soda three times daily. It has been necessary in some cases to reduce even this dosage, due to lack of tolerance, and occasionally the patient is unable to tolerate the drug at all. Experience has proven that it is impossible to establish a uniform dosage regardless of the appearance and weight of the patient. At the same time it is important to administer a sufficient amount of the drug, particularly during the first few days, to obtain ma imum therapeutic effect. No patient was given prontosil intramuscularly, since it has been shown that the internal administration of the drug was sufficient.

Of the 85 adult patients treated with the combined method, the clinical results were almost miraculous. A number of my patients showed such rapid improvement that the drug, in numerous instances, was discontinued in three or four days, with no sign of recurrence of the infection. The patient was instructed, however, to continue regularly the office irrigations and urethral instillations, until the final check-up showed the absence of infection. When the drug is administered without additional therapy the patient is very apt to discontinue the office visits entirely too soon and become a carrier. On the other hand, the simple routine of internal medication may cause the patient to supervise his own dosage, with perhaps disastrous results. In this series, there were 71 cases of acute anterior gonorrheal urethritis, 10 cases of posterior gonorrheal urethritis with prostatitis, two cases of acute epididymitis, and two cases of acute prostatitis. In the acute anterior cases, the discharge disappeared in from one to four days. The acute symptoms, in many instances, cleared up entirely during the first 48 hours. In those patients who showed rapid response to the treatment, repeated laboratory tests failed to show any gonococci, and the patients remained clinically well, with the exception of seven patients who developed a posterior involvement.

The female patients complained less about the drug and apparently had better tolerance, although this dosage was only slightly reduced. Internal

medication was combined with local therapy. With the exception of one patient, all showed rapid improvement, with disappearance of the gonococci within four days. The patients were kept under observation from four to five weeks before they were dismissed, the combined treatment being continued in the meantime. The patient who did not respond to the drug developed an abdominal condition requiring surgery and was referred to a gynecologist for operation. No other patients developed any complications.

The infection in the five children responded very favorably to sulfanilamide therapy. In addition, the boys were given urethral irrigations and mild silver instillations on alternate days. Additional therapy in the girls consisted of vaginal introduction of theëlin suppositories. The duration of the illness was approximately four weeks.

As to the side effects of the drug, practically every patient complained of a slight headache and dizziness which, in many instances, cleared up as the dosage was decreased. In spite of the fact that many clinicians have called our attention to numerous and serious complications, in my series of cases there were only two cases of skin eruption, three patients with high fever, and two with evidence of marked cyanosis. Four patients complained of very severe headache, and were unable to tolerate the drug at all. They were not included in the series. Following the reactions, the drug was immediately stopped. Etiological factors concerning these complications are still under dispute. Blood counts should be routinely done if the drug is continued over a longer period; however, in my opinion it is not essential if the symptoms are of short duration, and the patient shows no evidence of any suspicious reaction.

After reviewing the study of Cook and Sutton of the Mayo Foundation, regarding sulfapyridine in the treatment of gonorrhea, I have substituted for sulfanilamide this drug in an additional series of 10 patients. This chemical, in my opinion, even from the limited number of patients treated, strikes me as being much superior to sulfanilamide in the treatment of acute and chronic gonococcal infections. In two of the patients who failed to respond to sulfanilamide therapy, quick recovery ensued when sulfapyridine was administered. The remainder of the patients showed a cessation of their urethral discharge in approximately three days with no signs of recurrence. The average daily dose was 45 grains, with practically no side effects resulting from its use. Experiments have proven that it is less toxic than sulfanilamide and does not cause a reduction in the number of leukocytes or erythrocytes in the circulating blood. In addition, the danger of agranulocytosis is avoided. I am convinced that we have in this chemotherapeutic agent, a very valuable drug, which, in my opinion, will replace sulfanilamide in the treatment of gonococcal infections.

A further report of this additional study will soon be published.

Bibliography

1. Long, P. H., Bliss, E. A.: The Use of Para-aminobenzenesulfonamide (Sulfanilamide) or Its Derivatives in the Treatment of Infections Due to Beta Hemolytic Streptococci Pneumococci, and Meningococci. *South. M. J.* 30:479-487 (*May*) 1937.

2. Dees, J. E., Colston, J. A. C.: The use of Sulfanilamide in Gonococcic Infections. *J. A. M. A.* 108:1855-1858 (*May* 29) 1937.

3. Sinkoe, S. J.: Procaine Instillation in the Management of Posterior Gonorrhoeal Urethritis. *Reprint from Urol. & Cut. Rev.* (*Sept.*) 1933.

4. Idem: Experiences in the Management of Gonorrhoea. *Urol. & Cut. Rev. Vol. XXXI. No.* 10. 1927.

OBSTETRICS

Ivan Marriott Procter, M.D., F.A.C.S., *Editor*

The Use of Gum Acacia Solution in Obstetric Shock

After observing the routine intravenous injection of 6% gum acacia during major operations in George Gray Ward's Clinic at the Woman's Hospital, New York City, we began its use as a prophylactic in major operations and as treatment for shock and hemorrhage in obstetrics. McCord has frequently recommended its use in the management of placenta praevia. In the beginning, we were timid about its use on account of "its being stored in the liver to retard function, coating erythrocytes, impairing their respiration, reducing the carbon dioxide combining power of the blood (5-10%) and increasing the sedimentation rate", as pointed out by Randall and Hunt in their recent article (*A. J. Ob. Gyn.*, May, 1939). They reported 6,000 injections of saline and acacia at the Mayo Clinic without untoward results and called attention to Mayturn and Magath's treatment of 3,000 patients with reaction in one due to sensitivity to acacia at the time of the second injection five months later. Other writers, notably Olivecrona and Lee and later Sturddiford, reported deaths following its use, but in each instance there was doubt as to accuracy of the preparation of the solution.

This preparation calls for the most painstaking and accurate technique. Sterilization was a great problem in the beginning, handicapping its preparation except by the expert. To-day adequate solutions are available through reliable chemists and home preparation is unnecessary. For several years it has been a routine with us to have avail-

able at all times apparatus and solution for the injection of 6% gum acacia. We do not feel that this is a substitute for blood transfusion and in the management of placenta praevia a donor is selected and kept available from the time of the first bleeding. However, there is not infrequently unsuspected shock and hemorrhage and in these cases the immediate use of acacia solution is life saving, while the routine preparation for transfusion is being carried out. We use the solution at once if the patient has lost a large volume of blood or if there is a radical drop in systolic blood pressure. In the majority of cases after acacia begins to flow the pressure will be stabilized and shortly thereafter show an approach to the normal. If the blood loss or condition of the patient warrants it, the injection is followed by direct transfusion. We had one death, not due in our opinion to the acacia, following its prophylactic use in supravaginal hysterectomy. The patient showed a transitory drop in pressure during operation and on the eighth day following developed violent spastic movements of the extremities. Unconsciousness and high fever followed, and death from encephalitis on the fourteenth day after operation.

Randall and Hunt report on 4900 obstetric patients in whom 93 (or 1.9%) had a sufficient degree of vascular collapse due to shock and/or hemorrhage to warrant the intravenous injection of saline solution of acacia. In this group there were 44 cases of post partum hemorrhage, 11 of shock without hemorrhage, 11 of abruptio placentae, 11 of placenta praevia, 8 of abortion with hemorrhage, 5 of hemorrhage and traumatic shock following operative delivery, 1 of ruptured uterus, 1 of purpura, 1 of retained placenta with severe anemia. There were 5 deaths all occurring before 1931. Two of these patients had diabetes, 1 toxema with carcinoma of the sigmoid, 1 eclampsia, 25 convulsions before admission, 1 puerperal sepsis. The average amount of solution administered was 533 c.c., the least amount 300 c.c. Four patients received 1000 c.c. or more, the greatest amount was 1500 c.c. (90 grams acacia). In 37 patients, transfusion followed the acacia. The response to acacia was satisfactory so far as the symptoms due to vascular collapse were concerned in 85 (91%) and in all patients after the addition of blood. It seems significant that none of the deaths occurring in the 4900 patients was due to hemorrhage.

Technique.—The sterile apparatus consists of a 250 c.c. elongated flask, attached to this is a 25 c.c. stop-cock burette. Each is attached through rubber tubing to the two arms of a glass Y. To the third arm is a six-foot tube which is coiled in a pan of warm water (110-120° F.). New tubing should be boiled 30 minutes in soda bicarbonate solution. Inserted in the tubing near the patient is a glass thermometer, through which the heated acacia passes on toward a Luer adapter that receives the intravenous needle. All air is expressed from the tubing after placing 50 c.c. of saline in the flask. The saline is fresh and prepared from distilled water. One-half of a 100 c.c. vial (as prepared by Lilly) is placed in the flask and saline added up to 250 c.c. The speed of flow is read off on the small burette and the solution allowed to flow as the condition of the patient demands. Our rate is usually double that of glucose (or 8-10 c.c. per minute). The amount usually given ranges between 300 and 500 c.c., according to the patient's reaction. The solution passes the thermometer at a temperature of 99 to 100° and this is regulated by changing the water in the basin. We believe that intravenous apparatus (this may be very simple—a sterile burette, tubing, needle), ampule of standard gum acaia, and sterile fresh saline should be a part of the obstetric equipment of every physician attending women in labor—in home, in maternity or general hospital; that the more frequent use of this solution carefully prepared and painstakingly administered in case of vascular collapse due to shock and/or hemorrhage would, result in lower obstetric mortality. It must be remembered, however, that all potent therapeutic agents carry with their good the evil of complications unless administered in judiciously chosen cases and with care and skill.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Notes on Practice

Since the first of the year I have been advising and administering tetanus toxoid along with diphtheria toxoid to infants. To date I have observed no unfavorable reactions. Being a new idea to practically all parents to whom it has been mentioned, they have to be convinced. The preparation comes in vials already mixed and is given in two doses, one or two months apart. If and when the child is later exposed to the possibility of a tetanus infection, the third dose of tetanus toxoid is administered. In this way the necessity for administering tetanus serum is obviated. We certainly witness more serum reactions following tetanus serum than with any other form of serum. Anything that will protect against tetanus and relieve us from the dread of serum reactions is most certainly a welcomed addition to therapeutics.

Tetanus toxoid is recommended by the American Academy of Pediatrics. Following the injections the Schick test should be given as formerly to ascertain whether or not sufficient immunity has been developed against diphtheria. Elaborate blood studies may be done to show the high increase in tetanus antibodies following the administration of the tetanus toxoid.

Some years ago this column carried the editor's appreciation of chick embryo smallpox vaccine. With additional experience this form of smallpox vaccine is still more appreciated than before. Reactions are almost negligible, the scar is greatly reduced in size, the number of takes is at least as great as with the cow belly type of vaccine, the cost is but little more, and best of all little girls vaccinated on the lower thigh are not required to seek their beds because of the severe reactions as occurred with the old style vaccine. Until something better is demonstrated, chick embryo vaccine will serve my needs for smallpox vaccine. While on the subject, it has been my experience that vaccination is best done during cold weather, before the end of the first year of life, and it is never safe to vaccinate edematous children.

Tuberculin testing is still a neglected field. It should be done routinely. In Asheville nearly 25% of school children show a positive skin test. My comparison so far between the Mantoux (intradermal test) and the new adhesive tape testing —the Vollmer test—has shown almost indentical results. There are three small patches on a strip of adhesive tape. The upper and lower patches are tuberculin and the middle patch is the control. Full directions come with each package. Children who fear the needle appreciate this form of testing. So do parents! Follow the directions carefully and you will be delighted with the results. Check the results against a known strength of old tuberculin if you are interested in comparisons.

Would that we had a satisfactory vaccine to treat whooping cough. Just about the time I feel that I have such a preparation a series of cases come along in which no benefits are seen. Even larger doses than those advised fail to give satisfactory results. An even greater problem is the diagnosis of whooping cough in the previously vaccinated children. About 15% of those vaccinated lose their immunity, but except in rare instances they have a very mild attack of whooping cough. The paroxysms are mild, the whoop is rarely present, vomiting is not a troublesome symptom. In my experience the best aid to diagnosis is the fact that the cough is worse at night. Very few of these children require sedatives for the attack, but they create a menace to the community since they most certainly can spread the disease. After ten days of the cough the blood count usually tells the tale. But in the meantime they have spread the disease widely. The parents often believe the vaccine provides permanent and complete immunity. Perhaps it would be well to revaccinate after three or four years. In the 15% who fail to obtain complete protection, many of their parents rest under a false sense of security.

To Remind You of—
SOUTHERN PEDIATRIC SEMINAR,
SALUDA, NORTH CAROLINA
19th Session, July 24—August 5, 1939
D. L. SMITH, M.D., Registrar, Saluda, N. C.

GENERAL PRACTICE

WINGATE M. JOHNSON, M.D., *Editor*, Winston-Salem, N. C.

THE ST. LOUIS MEETING OF THE A. M. A.

THE St. Louis meeting of the A. M. A., May 15th-19th, was well attended. There is so much going on at once in such a meeting that it is impossible to take in more than a small part. The only General Session open to all the members was the formal opening on Tuesday night, May 16th, when the retiring president, Dr. Irvin Abell, turned over the gavel to Dr. Rock Sleyster. This meeting—held in the Auditorium Opera House—was marred by the too-long addresses of welcome from Governor Stark, the acting mayor of St. Louis—whose name I have gladly forgotten—and the president of the Missouri State Medical Association. Each of these gentlemen seemed to be laboring under the delusion that he was expected to deliver the principal address of the evening, and by the time Dr. Sleyster's turn came, the audience was too worn-out to appreciate his really splendid address.

Naturally my chief interest lay in the medical section, and I was able to hear most of the papers that were particularly appealing. I shall not attempt even to outline all those, but will only call attention to the high spots in a few. Karnosh, of Cleveland, read an intelligent paper on the treatment of insomnia. He made the points that most patients who suffer from insomnia are of the psychoneurotic type, and that much may be done by carefully digging into the underlying causes of their wakefulness. Many of these patients have the fear, openly expressed or subconscious, that their insomnia will lead to insanity. They should be told that this does not happen. Another false conception which should be corrected is that to sleep in the daytime is apt to interfere with sleep at night. On the contrary, an afternoon nap is desirable. It helps to convince the patient that he can sleep, and the relaxation thus obtained often

carries over to bedtime. An endocrine imbalance is often responsible, particularly in women at the menopause. Here appropriate treatment is of great value. Likewise vitamin deficiency, especially of Bl and C, may produce insomnia.

Dr. H. A. Reimann, of Jefferson, read a paper entitled, Focal Infection and Systemic Disease: A Critical Appraisal. The word, critical, should have been heavily underlined, for the paper was really iconoclastic. Few who heard him would be willing to go the whole way with him, and I suspect that he himself would admit that, in an effort to stimulate interest and make his paper more effective, he purposely overstated the case against the removal of tonsils, teeth and other detachable appendages.

McKittrick, of Boston, presented an illuminating discussion of obliterative disease of the lower extremities—particularly sclerosis and diabetic gangrene. The first condition, in their experience, occurred only in males, usually young, and had a long duration. Arteriosclerotic disease occurred in the old, most often in males, and was of shorter duration. Diabetic gangrene affected far more women than men and had a comparatively short course.

LaDue, of Minneapolis, advocated frequent feedings in massive hemorrhage from peptic ulcer.

Garvin, of Cleveland, read an excellent and practical paper on the complications following sulfanilamide. He found fever in 10% of the patients taking the drug, dermatitis in 4%, and acute anemia in 3%. He offered nothing new in the way of treating these complications, but he did offer the excellent advice not to use such a powerful drug for mild infections, such as ordinary tonsillitis, pharyngitis and mild scarlet fever.

The Frank Billings Lecture, by Dr George Dock, dwelt upon the history of coronary disease. It was considered and treated as a neurosis.

To any one who attends a meeting of the A. M. A. for the first time, my advice would be to visit the scientific exhibits, even at the expense of part of the more formal scientific sessions. One may read the papers in the *Journal of the A. M. A.* at leisure, but after the meeting is over he does not have the opportunity of visiting and studying the exhibits. In my judgment, the best one I visited was Dr. August A. Werner's on endocrinology. The best part of it was Dr. Werner's own inimitable personality. He answered questions quickly and clearly, driving them home with flashes of wit, and adding pithy comments on current affairs all along. In his discussion of the menopausal syndrome, I was impressed with the small dosage of estrogenic substance used—500 to 2000 international units of theëlin three times a week. He claims that he gets far better results from this method than from 5000 to 10,000 units once a week. His reasoning is that theëlin is as potent as thyroid extract, and "you wouldn't use big doses of thyroid extract unless you knew they were necessary, would you?" Another point of interest was that he often gave theëlin to women 10 or 14 years after cessation of the menses—sometimes they were 55 or 60 years old—with great benefit. His practice is to continue treatment for three months, then tell the patient to come back when she feels the need of further injections. He never gives estrogen by mouth, but always intramuscularly. It is much more effective when so given, and it enables the doctor to keep up with his patient. I may add that after learning what the druggist charges for the oral preparations, I could tell my patients that there was virtually no difference in the cost of the two methods.

Dr. Werner also had some interesting case reports of the male climacteric. While this condition is less familiar and usually less urgent than in the female, he had had a number of men patients who responded brilliantly to testosterone.

Among the other many e hibits were Abel and Siebert's on fibrositis; Sherwood's on arthritis; that of Joslin and his staff on diabetes; that of Twiss, Carter and Greene on biliary colic; that of Fowler and Barer on the therapeutic use of iron; and the exhibit our own North Carolina State Medical Society's Graduate Medical Education. But to attempt to select a list is too responsiible an undertaking.

While the scientific sessions were under way, the House of Delegates was wrestling with many problems, chief of which was the Wagner Health Bill (so-called). The report of the Reference Committee to consider this bill will have been presented in full in the Journal of the A. M. A.. It was adopted without a dissenting vote, and on every hand was heard warm commendation of the report, which is a vigorous rejection of the provisions of the Wagner Bill.

The choice of Dr. Nathan B. Van Etten, of New York, for president-elect, was a happy one. No man has ever more richly deserved this honor.

Modern Concepts in Measles Control

(Adolph Weinzirl, Poland, in *Northwest Med.*, May)

Seventy-five per cent of the measles deaths occur in the relatively small proportion of children who contract the disease before they are three years old. Attempts to prevent these measles deaths should include anticipation of an outbreak and a general warning to parents that children under three should be safeguarded in every possible way against exposure during the period of danger; should be kept at home and away from older children during the period of increased measles prevalence. If there are in the family older children of school age who

have not yet had measles, there may be special difficulties to overcome.

Health officers should teach that good care for the measles patient includes calling the family doctor and following his advice, together with strict isolation of the sick child. As far as possible only one attendant should be allowed to minister to the child's needs. Such isolation is not advocated as a means of preventing the spread of the disease, for isolation is not effective in serving that purpose. Rather, it is urged as a means of guarding the sick child against bronchopneumonia which is the most frequent immediate cause of death in measles cases. Friends and relatives, particularly if suffering from coughs and colds, should be kept away from the measles patient for fear they may bring him pneumonia.

The use of convalescent measles serum or of immune globulin is effective as a means of preventing or modifying an expected attack. Convalescent serum gives no troublesome reactions, but is hard to obtain in sufficient quantities. Immune globulin is readily available, but there has been some difficulty with reactions resulting from the hemoglobin content. Improved methods of preparation seem to be overcoming this disadvantage. Attempts to modify measles through use of these agents seems indicated that is, in children under three years old and children of any age suffering nutritional or other health handicaps, who are known to have been exposed. A modified attack of measles generally has an advantage over complete prevention is that an active immunity of a more lasting nature is established. The passive immunity produced by convalescent serum or immune globulin cannot be expected to last throughout the time of danger, which corresponds to the period of the outbreak.

SURGERY

Geo. H. Bunch, M.D., *Editor,* Columbia, S. C.

The Disruption of Laparotomy Wounds

The surprisingly large incidence of disruption of laparotomy wounds reported in recent literature is in most cases due to lack of proper appreciation of fundamental principles of wound healing.

Although a laparotomy wound has to be placed so as to give adequate exposure of the underlying pathology it should be made so as to conform to well established laws of physiology and of anatomy. An incision that destroys the nerve supply or impairs the blood supply to muscle, even when healed, is ultimately followed by muscle atrophy. For this reason longitudinal incisions through the rectus muscle cause atrophy of the inner or median portion of the muscle. In laparotomy wounds, if possible, the gridiron principle of muscle separation should be utilized. When muscle fibers are split and not cut wound healing is facilitated because trauma to tissue is less and because muscle pull is along the line of incision rather than across it. Being at rest wound surfaces that fall together readily grow together.

It is the writer's opinion that disruption of laparotomy wounds is most often caused by imperfect closure. Wound tension from incomplete muscular relaxation is the most common factor in this. The patient must be kept under deep inhalation anesthesia during closure to insure complete relaxation. Spinal is the anesthesia of choice. Meticulous care should be taken to accurately approximate each tissue layer. Stitches should be placed close together so that there can be no bulge or give between. Particular attention should be given to accurate suturing of the everted peritoneal edges. If the omentum is allowed to enter between the peritoneal sutures it is a potential cause of hernia and of disruption. Tight suturing causes necrosis. Tissues should be approximated, not strangulated. The manufacture of suture material has been perfected so that even the smaller sizes now have sufficient tensile strength for wound closure. If of good quality zero chromic catgut is large enough and strong enough for any abdominal operation.

The third important factor is wound healing is asepsis. Infection of clean wounds comes only from faulty technique. However, when infection is present and suppuration has occurred before operation, primary healing of the incision can not be expected. Infected wounds should be closed more loosely than clean wounds. In them catgut should be used only for peritoneal approximation, the skin and the fascia should be closed with closely spaced interrupted figure-of-eight silkworm-gut sutures. A strip of folded rubber dam placed under the fascia and brought out through a stab wound provides for the escape of serum and prevents wound suppuration and fascia necrosis.

A final factor is wound healing is the physical state of the patient. Those who are weak from chronic disease are apt to be lacking in normal resistance to infection and in tissue vitality. Fascia is the retentive supportive tissue of the abdominal wall, muscle is the motive tissue. In the obese both are deficient in quality. This explains the high incidence of recurrence in them of hernia after operative repair. Most cases of disruption are in fat people. This is especially true after right-rectus incisions in gallbladder operations on fat women. Obesity, potential infection and transverse tension on the wound made by the severed segments of transversalis muscle are not conducive to wound healing. Patients with postoperative cough or nausea are more apt to have disruption. Diabetics, because of lessened resistance to infection, are also more vulnerable. Syphilis has but little effect on healing.

In conclusion, it may be noted that with very few exceptions laparotomy wounds, made right and closed right, heal right.

Radical Surgery in Cancer

(E. J. Grace, Brooklyn, in *Medical Times*, June)

Virchow stated: "Nothing has penetrated less deeply into the minds of all than the cell theory in its intimate connection with pathology."

Sound surgery in cancer must rest upon biology, and any operation to justify itself must consider this basic fact with all its diverse implications. This is especially pertinent to the present-day surgical concepts in radical surgery for the cure of malignancy.

The present concept of cellular pathology presenting morphologic variations having a bearing on the prognosis was published by von Hansemann, in 1901, some years after the theory of radical mastectomy had been so enthusiastically accepted by the profession. The clinical value of this theory was ignored for over 20 years, until Broders in MacCarty's laboratory showed with critical cell study in a series of epidermoid tumors that the prognosis could thereby be forecast with a greater degree of accuracy than by any other method then available. Since this report numerous other workers have corroborated Broders' work and extended it to cover practically all forms of neoplasm found in man.

If one studies all reports using this system of grading tumors, in which reliable detail is given, it becomes glaringly evident that the prognosis is bad in highgrade tumors, irrespective of the degree of radicalism resorted to; and conversely, the lowgrade tumors with any type of surgery gave good results.

In a paper published by me in 1929, it was seriously questioned whether radical surgery was at all responsible for the control of metastasizing neoplasm. The opinion I then formed and have not since changed is that the biology of the tumor determines the outcome, not surgical radicalism.

THERAPEUTICS

J. Fred Nash, M.D., *Editor*, St. Pauls, N. C.

A Rationale for the Management of Heart Disease

(T. J. Dry, Rochester, Minn., in *Jl. Iowa State Med Soc.*, June)

The pathologic processes eventuating in heart failure are few. Congenital defects, rheumatic fever and its sequelae, syphilis, hypertension and coronary sclerosis comprise almost the entire list.

We can discuss the treatment of heart disease under two headings: 1, the management of congestive heart failure due to any cause; 2, the management of cardiac states which will tend to lead to congestive heart failure or to other cardiac emergencies.

1. In congestive failure the heart is no longer able to expel the blood which is brought to it. When venous pressure reaches a certain level, fluids escape from the vascular system into the tissues and later into the serous cavities. One of the immediate consequences is anoxemia. Failure predominantly on one side leads to failure on the other, so that we can regard the heart as a functional unit and treatment is essentially the same in any case.

Reduce cardiac work to an absolute minimum, which means complete rest, physical and mental. In the earlier phases of treatment the opiates surpass in usefulness all other forms of sedatives. It is essential to offer reassurance to the patient and relatives, explaining the objectives in simple terms with warranted optimism. The second phase of treatment should be directed toward eliminating fluids that have accumulated, at times by paracentesis. The intake of fluid and the content of salt in the food must be low. In the case of a coöperative patient who understands what the physician is trying to accomplish, the sense of thirst is the best guide in determining the proper intake of fluid. It is neither necessary nor wise to attempt elimination of fluids by catharsis. Mineral oil or milk of magnesia to move bowels without straining.

Venesection of 300 to 600 c.c. withdrawn rapidly may do good.

In most instances the measures already mentioned will suffice. In the severe forms of failure, oxygen will help to give relief quickly. The psychologic effect must not be disregarded, since it has been customary for so long to associate oxygen with the gravest forms of illness.

Glucose intravenously in a 10 to 25% solution, in amounts varying from 300 to 400 c.c. or more concentrated solutions in smaller amounts has a definite place in the treatment of the severe forms of coronary sclerosis; in such cases it will at times relieve paroxysms of dyspena when all other measures have failed.

After relief comes gradual rehabilitation of the patient to a level of living which is within the limits of his cardiac reserve.

Digitalis is indicated in any form of heart failure except after acute coronary occlusion. In most cases powdered leaf orally is entirely adequate; in cases of severe failure, especially with nocturnal dyspnea 4 to 6 cat units of a suitable preparation intramuscularly when the patient is first admitted, to be repeated on the next day, or the remainder of the digitalizing dose may be given orally. Old individuals are more susceptible to the drug than young. When what seems to have been an adequate amount of digitalis fails to reduce the ventricular rate in cases of auricular fibrillation, look for evidences of hyperthyroidism.

Coupled rhythm, marked bradycardia, nausea and vomiting constitute the earlier evidences of digitalis intoxication. The maintenance dose of digitalis varies from 6 to 9 cat units per week and often is best tolerated when given on 2 or 3 consecutive days of each week. A period of 4 to 5 days should elapse between initial digitalization and the commencement of the maintenance program.

The mercurials surpass all other drugs in their diuretic effect. A contraindication is renal damage; but albumin, casts and erythrocytes frequently are present in the urine due to congestive heart failure itself. If a suitable vein is not available, the intramuscular route is used. Use a needle of small bore. The injection may be repeated at intervals of 2 to 3 days, the initial dose being 1 c.c. and thereafter 2 c.c. These diuretic agents of great advantage for symptoms of reduced cardiac reserve, but no signs of actual heart failure. Suppositories seldom are indicated since the methods already described are far superior.

Potassium nitrate and potassium chloride recently have replaced ammonium chloride as a diuretic. Xanthine diuretics are not in any way comparable to the diuretics which have been considered.

2. Individuals who have rheumatic heart disease, congenital cardiac anomalies, hypertension, cardiovascular syphilis or coronary sclerosis with or without the anginal syndrome—all these are faced with the problem of living within the limit of their cardiac reserve. The problem may include advice on the choice of means of livelihood and forms of reaction. One is treating not only a disease but also a human being.

The facts which the patient should know may be explained without the technical terms which to him have an ominous meaning. A period of rest after the noon meal, its duration depending on the state of the cardiac reserve. A good night's sleep must be ensured and a suitable sedative should be resorted to p. r. n.

The most important instruction regarding diet is that no large meal be taken. Salt tends to increase edema. The protein requirement consists roughly in one average helping of meat a day. So must all other metabolic requirements be met, including the necessary vitamins. The treatment of obesity must not be neg'ected. Moderation is the keynote. Alcohol intelligently used in medicinal doses may be helpful in many cases of coronary sclerosis.

Otherwise trivial intercurrent infections demand that the patient stay in bed.

In most instances it is possible by the correct approach to prevent the development of a neurosis which at times becomes disabling out of all proportion to the severity of the heart disease.

TUBERCULOSIS

P. P. McCain, M.D., *Editor*, Sanatorium, N. C.

Pneumoperitoneum

Among the many therapeutic measures which in the last two decades have been found to be beneficial in the treatment for advanced tuberculosis pneumoperitoneum is one which has not had the attention it deserves. It is not infrequently helpful in relieving the distressing cough and often other symptoms in patients whose cavities can not be closed by pneumothorax or other forms of collapse therapy. It offers a ray of hope for many patients who would otherwise be considered entirely hopeless.

Oxyperitoneum was first used for tuberculous peritonitis and later for intestinal tuberculosis. Later still pneumoperitoneum was used for both conditions, since it was found that oxygen was too rapidly absorbed. Practically all the patients on whom it was used also had extensive lung lesions, oftentimes lesions which could not be treated by other forms of collapse therapy. It was noted in many cases treated by pneumoperitoneum that, not only the intestinal condition improved, but, also, the pulmonary symptoms. Surprising improvement in the patient's general condition and in the pulmonary lesions were also sometimes observed. Occasionally cavities closed which had resisted all other forms of treatment, and in some cases acid-fast organisms disappeared from the sputum. Pneumoperitoneum causes an elevation of the diaphragm which can be maintained by weekly doses of from 400 to 1500 c. c. of air, and produces a relaxation of the diseased lungs.

Banyoi, of the Muirdale Sanatorium, Wauwatosa, Wis., probably more than anyone else, has employed and written about this procedure. In January, 1938, issue of *Tubercle* he reports his experience with 150 cases. He says, "This paper is based on the observations I have made on 150 patients whom I treated with artificial pneumoperitoneum during the past 8 years. There is ample evidence that it is of great curative and palliative value in intestinal tuberculosis. Concerning pulmonary tuberculosis, my experience, together with the few available reports of others, shows that, with proper technique, it is a relatively easy, simple and safe procedure. The favorable symptomatic responses attributable to this treatment are so impressive that one is justified in recommending it for further clinical trial."

The technique which Dr. Banyoi recommends is as follows: "An artificial pneumothorax apparatus is used. The skin of the abdominal wall is anesthetized at the selected site of injection by 5 c. c. of a 1% novocain solution. Strict asepsis is observed. I prefer to inject the air about three fingers-breadths below and to the left of the umbilicus. No special preparation of the patient is necessary except that the bladder be emptied, and severe cough be controlled by an adequate dose of codeine. It is better to use a Floyd-Robinson needle than an ordinary needle. The former has a handle-like head that permits a firm grasp and enables the operator to insert it through the abdominal wall *slowly*. It also has a stop-cock that prevents the escape of air on subsequent injections. A sudden or jerky paracentesis should be avoided, this is the only way to prevent accidents, such as perforation of the intestine, injury to a large blood vessel, or hemorrhage. As the needle is passing through the abdominal wall the disappearance of resistance in front of the point of the needle indicates that it reaches the peritoneal cavity. Then the needle is connected with the manometer of the apparatus. The manometer registers a neutral pressure in this part of the abdomen. At first injection it cannot be used as an indicator of the correct position of the needle. It is of some help on repeated injections by showing an oscillating or fixed positive pressure, thereby serving as a guide for the proper insertion of the needle. If in doubt, the needle should be forced deeper rather than to inject air into a blood vessel and cause air embolism. It is advisable to place the patient on a somewhat slanted operating table when the first treatment is given. The injected air reaches to underneath the diaphargm sooner than it would in the horizontal position. . . . . The initial dose varies from 400 to 1000 c. c. and it should depend upon the size of the abdominal cavity, the integrity and tonus of the diaphragm and the abdominal wall, and upon the general condition, sensitiveness and coöperation of the patient. The refills consist of 800 to 1500 c. c. and they are given at weekly intervals. . . . . ."

Suicide is a constant danger (to the depressed patient) *particularly when he begins to improve.—P. E. Robinson.*

Some private psychiatric hospitals maintain 2 or 2½ members of the nursing and technical staff to each patient. *—P. E. Robinson.*

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

How is the Food?

One of the most frequent questions asked about hospital service is, "How Is The Food?" If you hear a person remark that he or she has just been to the hospital, the first question their friends asks is, "How Is The Food at———Hospital"? Facts are facts and there is no denying them, but just why the food should be such an important part of the service has always been a mystery to me.

I suppose patients who have been ill enough to go to the hospital are usually ill enough to stop eating for a few days. This gives their gastronomic system a much-needed and long-waited-for rest. After this food really does taste good and they enjoy their meals. Since patients enjoy good meals and are going to talk about them, let's give them good meals to talk about.

How to serve meals to various types of patients from all walks of life is a matter that not all dietitians seem to be greatly concerned about. A perfect service for one private patient in a $10.00 per day room would not satisfy the laborer in the ward. The private room patient is apt to prefer and expect individual dishes with fancy salads served in the most stylish manner. She is accustomed to many spoons, forks and knives. At home she has individual coffee pots and cubed sugar to be handled with tongs. She usually gets up about thirty minutes before and makes her very thorough toilet, then eats her breakfast between 8:30 and 9. A great deal of attention is given to her teeth, finger nails and complexion. She does not like to have her breakfast served at 7:30 nor does she like to be awakened at 6:30 or 7. She is not hungry so early in the morning and, besides, she needs the early morning hours to sleep. She usually reads until late, after her pain leaves her. To the writer it seems only fair to ask the dietitian to keep these things in mind.

The semi-private or very cheap private room patients usually are not quite so fussy about the number of individual dishes, salads and courses. They are satisfied with the ueual two-course meal, one knife, one fork, and two spoons or one and a dessert fork. Their mealtime will conform to that of the middle-class clerk, stenographer, bookkeeper and others. He wants his breakfast served at 7 or 7:30.

The ward patient wants quantity over quality He calls for his meals early in the morning, at noon and before dark at night. Give them bacon and eggs, or fried ham, coffee and biscuit for breakfast. Give them plenty but waste no time or energy on extra dishes or extra courses. They are not accustomed to it and have no desire to learn to appreciate it, especially in such a short period as their hospital stay would be.

Feed them as they are fed at home and the food will be good in your hospital.

CLINICAL CHEMISTRY & MICROSCOPY

The Toxicity of Mercury Applied to Normal and Abnormal Skin

A Preliminary Report

C. C. Carpenter, M.D., Michael Bolus, M.D., and J. A. Freeman, B. A.
Wake Forest, N. C.

In a series of experiments to determine the degree of absorption of mercury and its possible toxic effect when appied to the skin, a commercial ointment named Mercirex was used. This ointment contains Mercury-Zinc Iodide 0.1%, Mercurous Chloride 0.5%, Acetanilid 0.6% and Phenol 0.4%, in a lanolin base.

Volunteer college students were used for all of the tests. For the examination in normal subjects, 19 medical students were used. For the examination of those showing abnormal skin, cases were selected from those presenting themselves to the student infirmary for treatment of some skin disease. The students who were selected reported to us as a group later at a specially designated hour.

Each student collected six 24-hour samples of urine each week for five weeks. During the first week no ointment was applied. The samples of urine collected during that week were examined for evidence of kidney disease and for mercury content. All were found to be within normal limits.

During the following weeks the ointment was applied daily to an area of the abdomen six inches square by the student himself, gently rubbing with the ball of the fingers.

Each 24-hour sample of urine collected was tested for protein while fresh, after which 25 ml. (approximately 1 ounce) of concentrated hydrochloric acid and five grains potassium chlorate were added to each sample for preservation. These tests showed protein content of the samples taken after the application of the ointment to be within normal limits, as well as the ones collected before treatment

Method

Examination for mercury was first carried out using a photometric adaptation of Yoe's[1] modifica-

*From the departments of Biochemistry and Pathology, Wake Forest Medical School.
This study made possible through a Fellowship grant by the Mercirex Co., Milford, Delaware.

tion of the method of Schumacher and Jung[2]. For standardization a known quantity of 0.1-0.5 mg. mercury was added to one of the samples in each series of specimens taken the first week. The standard of 0.1 to 5.0 mg. mercury was used because is has been found to be within the range of mercury content in 100 ml. urine, in the therapeutic administration of this drug, without tissue damage[4]. Therefore, by the use of 500 ml. we are allowed the possibility of five times the stated concentration, before going above the normal limits.

Results in the accompanying table are in every case the average of a series of samples. In no case examined was the mercury concentration higher than 0.8 mg. per 500 ml. urine. The average increase in concentration following the application of the ointment was approximately 0.01 mg. per 500 ml. urine. This means that over five times the greatest amount eliminated may be present without producing tissue damage.

More recently a more accurate but less sensitive method developed by Tidwell and Freeman (to be published) has failed in every case to indicate the presence of as much as 0.5 mg. mercury in 500 ml. urine, which is again lower than the concentrations frequently found in patients being given mercurial treatments.

Summary of Mercury Runs

Case	Average of Sample before Mercirex applications	Average for weeks 2, 3, 4, 5 after Mercirex applications
Ba	4.0	4.0
Bl	2.0	2.1
Br (1)	2.7	2.5
Br (2)	2.8	2.9
By	3.3	2.5
Ca	4.4	3.4
Da	2.0	3.8
Fo	3.5	3.4
Gu	2.2	2.6
Ho	2.8	4.0
Jo	3.6	5.1
Ki	6.1	4.9
Po	5.8	5.7
Su	4.6	4.0
Wa	3.9	3.8
We (1)	6.8	6.8
We (2)	6.8	6.8
Wf	5.0	4.7
Wh (1)	4.8	5.7
Wh (2)	5.4	5.2
LE	5.2	5.6
EH (1)	4.2	5.6
EH (2)	4.5	6.3
Average	4.2	4.4

An increase in this reading of 2.3 indicates 0.1 mg. mercury per 500 ml. sample of urine.

A study of the elimination of mercury following application of mercirex to pathological skin has been started. Seven samples of urine collected at the end of treatment have been examined using the cuprous iodide spot test of Gettler[3] and the photometric method developed by Tidwell and Freeman. Results of these experiments are given in the accompanying table. In the case of the spot tests, it has been found that a test is given when 0.05 milligrams or more mercury is present in 500 ml. urine.

Pathological Cases

	Days Treated	Spot Test Glettler's	Milligrams Mercury, per 500 ml. Tidwell and Freeman.
MT	77	***	0.5
HH	78	*	
CP	66	*	
HFF	60	***	
MRB	55	*	
RWH	56	—	0.0
RSH	50	**	
RMH	49	—	
JL	40	**	0.0
WM	40	**	0.0
JNM	36	—	0.0
KC	31	***	0.5
JWK	38	—	0.0

Those quantities of mercury marked 0 too small to be detectable by the method of Tidwell and Freeman (0.5 milligrams per 500 ml. urine).

Conclusions

In each of the cases examined the concentration of mercury has been lower than values obtained through mercurial therapy without tissue damage[4] This would seem to indicate the body would not absorb enough mercury from such an ointment to be injurious to the kidneys. There is no increased incidence of albuminuria or any other evidence of mercurial damages in either physiological or pathological cases.

References

1. Yoe: Photometric Chemical Analysis. *John Wiley & Sons*, 1928. Vol. I, p. 282.
2. Schumacher and Jung: *Ztschr. Analyt. Chem.*, 30, p 12-x (1900).
3. Gettler: *Am. J. Clin. Path.*, 7, tech. sup., p. 13 (1937).
4. Sollman and Schreiber: *Archives of Internal Medicine*, 57, pp. 46-62 (1936).

(We acknowledge with appreciation the work done on this problem by Dr. H. C. Tidwell, Professor of Biochemistry at Baylor University, while he held a similar position at Wake Forest Medical School.)

The Effect of Morphine on Intestinal Motility

(A. E. Hertzler, Halstead, Kansas, in *H. Kan. Med. Soc.*, May.)

Is morphine a stimulant or a paralyzant to intestinal peristalsis?

Small doses soon after injection stimulate, large doses after say an hour invariably paralyze peristalsis.

More interesting is its effect on absorption. Whether the fluid in the abdomen is an exudate induced by the injection of a chemical, or a solution injected into the peritoneal cavity, absorption is slowed.

The action is greater in the case of an exudate than on fluids introduced from without. Opium more slows absorption and is more a paralyzant than morphine.

Careful laboratory and clinical studies might result in a revival of the now forgotten opium treatment for diffuse peritonitis. No doubt this treatment is now preferable to operation in cases marked by severe distention. In these cases if surgeons would trade their scalpels for a dollar's worth of opium the patients would profit by the transaction.

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHIN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

LEONARDO DA VINCI
(1452-1519)

PASTEUR did more for the welfare of humanity than any man who has lived since Christ, but Leonardo da Vinci was more versatile and an even greater genius than Pasteur. We are prone to think of Leonardo as a painter only, especially in connection with his two most famous pictures—The Last Supper and Mona Lisa.

The Last Supper was painted on the wall of the refectory or dining hall of Santa Maria delle Grazie in Milan. He was four years working on this painting and was never satisfied with his head of Christ. This painting depicts Christ and His disciples sitting at the table, as described in the twenty-second chapter of Luke. Many consider this the greatest picture ever painted.

In 1652 the Dominican monks cut off the legs of the figure of Christ and of the disciples sitting nearest him in order to enlarge the doorway and during the Napoleonic wars French Hussars used the hall as a place to store feed for their horses. This picture suffered with the passing of the years. It flaked and scaled; mildew set in; at length it became "a mere ghost of a picture." The attempts of artists to restore the picture to its original brilliance were as detrimental as the forces of nature. Fortunately, a restorer was at last found who understood the medium with which The Last Supper was painted. He was able to preserve the crumbling remains of the original work and retouch the bare spots. Thus the "ghost" has been restored to a semblance of life and continues to be one of the most highly prized paintings in the world.

The most famous portrait in the world is of course Leonardo's Mona Lisa, now in the Louvre in Paris. It is supposed to be the picture of the wife of Francesco del Gioconda. Gioconda was old and rich while his wife Madonna Lisa was young, and it is reasonable to believe that he commissioned Leonardo to paint the portrait. Leonardo was six years doing the work and during the time Mona Lisa sat for him at intervals. It is said that he always had music played during the sittings in order to help her maintain that enigmatic smile. Leonardo was more attracted by her than any woman he ever met, and he painted a portrait that has never been equalled.

In the *New York Times Magazine* of June 4th, 1939, Lansing Warren in an article, "The Louvre Selects its 'First'," gives a list of the treasures of Art " which would be saved first if an emergency of war or peace should imperil the Louvre", and places on the list five of Leonardo's paintings: Mona Lisa; Annunciation: St. Ann and Virgin; Virgin of the Rocks; and La Belle Ferroniere.

The Italian Renaissance came to its full glory in the work of the three great artists whom Cellini called "the book of the world"—Leonardo da Vinci, Michelangelo and Raphael. Of the three da Vinci was the master. In point of time "he taught Michelangelo force, Raphael beauty, and the other artists grace." Da Vinci argued that vivid colors captivate the mob, but that the true artist caters not to the mob, but to the chosen ones. His aim was not to immortalize glistening colors,—it was far more subtle than that. Instead he prided himself that in each picture a miracle took place,—that light and shade somehow made flat surfaces look convex. He wanted the shadings to "melt away like smoke, like the sounds of distant music." Little wonder that Raphael said "Michelangelo is not worthy of loosening the straps of your shoon, Messer Leonardo!"

Leonardo was born in the little town of Vinci, twenty miles from Florence.

He was the illegitimate son of Ser Piero da Vinci, but, on account of his early indications of ability, his father took him into his home and reared him with his half-brothers. The elder da Vinci was a prominent man, legal adviser to many of the great families of Florence, including the Medici family. Leonardo was, accordingly, brought up in the best environment of the time. We are told that he was wonderfully handsome, full of graciousness, tact and generosity. No wonder he was a favorite with all classes. At an early age he was placed in the studio of Verocchio where he served many years as an apprentice at painting. There his originality attracted immediate attention.

While yet a young man Leonardo realized his varied abilities. In 1482, in a statement offering his services to the ruler of Milan as a military and civil engineer, after discussing such matters as engines of war, he added a paragraph in the nature of a postscript, in which he says: "In time of peace I believe I could equal any other as regards works in architecture, both public and private. I can likewise conduct water from one place to another. Furthermore I can execute works in sculpture, marble, bronze, or terra-cotta. In painting too I can do what can be done as well as any other, be he who he may. Moreover, I can undertake the making of the bronze horse, which is a monument which will be to the perpetual glory and immortal honor of my lord your father, of happy memory, and the illustrious house of Sforza."[1]

Evidently he was not suffering from an inferiority complex; on the other hand, there was nothing boastful in his assertions. He was merely stating facts, and he more than lived up to his seemingly extravagant claims.

Leonardo was a mechanic, a technician, a mathematician, a painter, a sculptor, an inventor, a philosopher, a poet, a biologist, an anatomist, a physiologist; moreover, he was the greatest physician of the fifteenth century. Before Bacon, he laid down the maxim that experience and observation must be the foundation of all reasoning in science.

Antonina Vallentin in her Leonardo da Vinci gives the following quotations from Leonardo's manuscripts, dealing with war and these items are accompanied by sketches and pictures of the implement to be used.

"1. I have methods of construction of very light and strong bridges, which can be transported with the greatest ease, offering the means of pursuing an enemy and also, if necessary, of fleeing from him; and others which are safe and immune from damage from fire or in an engagement, and are at the same time easy to take to pieces and set up again. I also know how to fire and destroy the bridges of the enemy."

"2. In laying siege to a fortress I know how to empty the water out of moats, and how to construct the most varied types of siege bridges, mantlets, scaling-ladders and other instruments required for such work."

"3. If, owing to the height of the ramparts or the strength of the position, it is impossible for the besiegers to make use of bombards, I have methods of destroying any citadel or fort which is not built on rock."

"4. I also have methods of making bombards which are very easily and conveniently transported. They can send out a hail of shot, and at the same time terrify the enemy with the accompanying smoke, to his great injury and confusion."

"5. I have methods of reaching an indicated point by secret winding passages, excavated without a sound. They can be led if necessary beneath moats or a river."

"6. I shall build covered wagons, safe and unassailable; when they penetrate with their artillery among the enemy, there are no ranks in such close array that the wagons cannot break them. And behind the wagons numbers of infantrymen can follow unharmed and without impediment."

"7. If occasion should arise, I shall manufacture bombards, mortars and catapults of the most beautiful and serviceable forms, differing from those in common use."

1. Gerwig, Henrietta, *Fifty Famous Painters*, Thomas J. Crowell Co., N. Y. 1926.

"8. Where the bombards would fail of their effect, I shall make catapults, ballistas, blunderbusses, and other engines of marvelous efficacy, unknown to customary practice; and, in general, to suit the manifold variety of occasions, I shall construct all sorts of different things for purposes of attack and defense."

"9. And for combat at sea, I have methods of making many instruments, excellently adapted for attack and defense, and ships that can resist the fire of the most enormous bombards and powder and smoke."

Needless to say, he was made chief military engineer in the defense of Milan.

He invented many labor-saving tools, designed machines for turning and grinding and methods of transmitting power, also an instrument to measure time. He was a skilled musician and made the instruments upon which he played. He designed a three-wheeled gun carriage and a bombing cannon, also a light, many-barrelled gun that would fire several barrels at a time—probably the precursor of the machine gun. He also invented a battle car with revolving sickles that would cut down the enemy and not allow the car to be reached.

He proposed planning for cities and worked out a complete sewerage system to be used.

From childhood he was interested in the mechanism by which birds are able to fly. He spent much time observing and studying their flight. Finally he undertook to build a flying machine. His notebooks carry elaborate sketches and descriptions of these flying machines. His model in every case was the bird. However, he never succeeded in designing a machine that would support man in the air. He claimed to have invented a submarine, but refrained from disclosing its construction because of its enormous possibilities of destruction.

He wrote extensively on fortifications; worked exhaustively on hydraulics; studied falling bodies on the hypothesis of the earth's rotation. But, merely to enumerate his inventions and manifold improvements on existing machines would require pages.

Throughout life, Leonardo made a practice of recording his observations and ideas in note-books which he made for this purpose. One-hundred-and-twenty of these were found intact. These were replete with original observations, sketches, drafts, and data covering almost every subject. Evidently he expected to find time some day to elaborate and systematize these notes and publish them in book form. These note-books bore the general title On Nature. Much of the Leonardo material was found in fragments, isolated notes, and more than five thousand small unmatched sheets. The most complete and best known of his writings is Treatise on Painting.

I said a little while ago that Leonardo da Vinci was the greatest physician of the fifteenth century. Paracelsus, Fracastoro, Paré, and Vesalius are considered the great figures of the medical renaissance; but Leonardo preceded them, and was the most brilliant of them all. He was the foremost scientist of the Renaissance and the most striking figure of this entire period of intellectual awakening. Breaking away from Galen, he went to nature instead of libraries for his information, and when he studied anatomy the body of man was his textbook. This idea of gaining knowledge by direct observation is one of his distinct contributions to the vast field of learning.

He dissected thirty bodies of males and females of varying ages—ten of them for the study of the veins alone. He was the first to undertake to draw anatomical illustrations which accurately represented what he found in the human body. Accordingly, many of Leonardo's anatomical drawings could be used appropriately in modern Textbooks of Anatomy to illustrate the text with accuracy. Even if it be admitted that Leonardo began the study of anatomy from the standpoint of the artist in order to understand the strucure of the body and thus lay a groundwork for his paintings, it must be admitted that he continued the study for the sake of truth itself and in the interest of anatomy as it affects the weal and woe of the human mechanism. Leonardo was the originator of the idea of studying anatomy for the purpose of improving art. But he went further and prepared the way for modern

anatomical teaching. Dr. McMurrich aptly says: "Vesalius was undoubtedly the founder of modern anatomy—Leonardo was the forerunner, a Saint John crying in the Wilderness."

But he was not satisfied with a knowledge of anatomy. He is known also as the founder of modern physiology. He was interested in form or structure (anatomy) from the standpoint of the artist and he was interested in function (physiology) from the standpoint of his interest in machinery. Thus he become both anatomist and physiologist.

As an illustration of of his painstaking study of function may be cited his experiment of attaching tapes to the bones of an articulated skeleton where muscles had been attached, and observing the result when the tapes were shortened as by the contraction of muscles. He may well be called the first experimental physiologist.

He studied and described the contractions of the ventricles of the heart and the function of the heart valves. He studied and described the function of the veins and pulmonary arteries and the movement of the blood. After describing the circulation of the blood, he added "and much more could I tell, if I were quite free to tell the truth." This has caused many to wonder how near he came to the actual discovery of the circulation. This, however, was not to occur until the first quarter of the seventeenth century. William Harvey published his Exercitatio Anatomica de Motu Cordis et Sanguinis in 1628, but he had been teaching the correct theory of the circulation ten or tweleve years before the publication of the discovery.

Leonardo was the first to observe and describe hardening of the arteries. He was looking for the cause of death in old people which was not due to disease or accident. He made a post-mortem examination on an aged person and gave his findings, in part, as follows:

"The veins of the aged acquire great length and so become tortuous, those that are wont to be straight, and they become so thick in their wall that they close and prevent the movement of the blood. And from this comes death in the aged, without illness."[2] Certainly that sounds familiar to medical men, and, as stated by McMurrich, was the first basis for the adage that a man is as old as his arteries.

He made extensive investigations upon the brain and it is interesting to note his method of studying the ventricles of the brain. It is the first time such a method was ever used. His description is as follows:

"Make two air-holes in the horns of the greater ventricle and take melted wax with a syringe, making an opening in the ventricle of memory (*i.e.*, the fourth ventricle) and fill through this opening the three ventricles of the brain and you will see the form of the three ventricles distinctly. But first place slender tubes in the air-holes so that the air that is in these ventricles may escape and give place to the wax."

He was a biologist who studied natural phenomena in living plants and animals and he considered man the center of studies and research. This established another landmark in civilization and his conception that man is a member of the family of all living things was the foundation of comparative anatomy and antedated Darwin's theory of organic evolution by three hundred and fifty years.

Naturally the question arises as to why we have not heard more about Leonardo as physician and why, for example, does Vesalius receive practically all the credit for founding modern anatomy. The following are suggested as possible reasons:

1. His work in other fields—art, for example—overshadowed his other achievements for a long time. Naturally his paintings were observed from the first but it was only after definite research into the activities of Leonardo that his contributions to medicine were discovered..

2. He was not connected with any university and therefore did not get the benefit of publicity. At that time transportation and communication made dissemination

2. McMurrich, J. Playfair, Leonardo da Vinci, The Anatomist. Williams and Wilkins Company, Baltimore.

of knowledge difficult. Only to the centers of learning did people go for information. And practically all learning centered in the universities.

Leonardo preceded Vesalius but Vesalius was at Padua University and his students publicized his work; then, too, the fact remains that Leonardo did not write a systematic anatomy such as Vesalius' de Humani Corporis Fabrica. For a long time it was thought that Leonardo had written a systematic treatise on anatomy based on his own dissections, and that the book had been lost. Undoubtedly he planned such a work, but Leonardo's great fault was planning and beginning a great many things but carrying only a comparatively few to completion. His own reference to his anatomy in all probability refers to one of his note-books in which he outlined a treatise he planned to write. In describing the effects of the movements in the shoulder joints he said, "You will find all the causes of this in the book of my Anatomy." And again he says—

"The articulations of the shoulders and of the other movable members will be spoken of in their places in the Treatise of Anatomy, where will be shown the causes of the movements of all the parts of which man is composed."

Furthermore, the anatomist, Vasari (1512) said the Leonardo had "made a book illustrated by drawings in red chalk and outlined with pen, made from his own dissections and drawn with the greatest of diligence." The consensus of opinion is that all these references are to his note-books.

3. Most of his best works came to light only in the last century—after the reputation of others had been established.

4. He avoided publicity. His preference was to go off to himself and think his own thoughts. He advised: "Be alone, and then verily thou wilt be thine own."

5. He wrote left-handed and backwards so that his writings can be read only with the aid of a mirror, and this caused his manuscripts and note-books to be overlooked for a long time.

The literature concerning this fascinating man is so extensive one can hardly expect to encompass it all—unless one is what might be termed a Leonardophile. But the general reader can get an excellent idea of him from The Romance of Leonardo da Vinci, by Dimitri Merejkowski, published by Random House, New York; or Leonardo da Vinci, by Antonina Vallentin, published by The Viking Press, New York. And every physician should read Leonardo da Vinci, The Anatomist, by Dr. Playfair McMurrich, published by The Williams and Wilkins Company of Baltimore for the Carnegie Institution of Washington.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D.....Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP.....Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. } .....Charlotte, N. C.

Urology

HAMILTON W. McKAY, M.D.
ROBERT W. McKAY, M.D..... } .....Charlotte, N. C.

Internal Medicine

Surgery

GEO. H. BUNCH, M.D. .....Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D..... Danville, Va.
IVAN M. PROCTER, M.D.....Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D.....Richmond, Va.

Pediatrics

G. W. KUTSCHER, JR., M.D. .....Asheville, N. C.

General Practice

WINGATE M. JOHNSON, M.D.....Winston-Salem, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D. .....Wake Forest, N. C.
R. P. MOREHEAD, B.S., M.A., M.D.....Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D.....Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D.....Greensboro, N. C.

Public Health

N. THOS. ENNETT, M.D.....Greenville, N. C.

Radiology

ALLEN BARKER, M.D.....
WRIGHT CLARKSON, M.D. } .....Petersburg, Va.

Therapeutics

J. F. NASH, M.D.....Saint Pauls, N. C.

Tuberculosis

P. P. McCAIN, M.D.....Sanatorium, N C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

ACCEPTING SEROLOGICAL TESTS AS INFALLIBLE DANGEROUS IN MANY WAYS

LABORATORY tests supply the evidence on which many diagnoses are made, evidence which is the means of directing treatment which saves many lives; but laboratory tests and laboratory testers, along with the rest of methods and of persons, fall far short of infallibility. We have seen tuberculosis, syphilis, gonorrhea, typhoid, malaria and appendicitis go undiagnosed or called something else because the laboratory part did not bear out the strong suspicions of the doctor who sought the laboratory's aid. Many innocent conditions have been given wrong labels that wrought confusion, despair, suicide even.

Laboratories do not set up as infallible. They have constantly to remind their over-enthusiastic friends that their testimony is only a part of the evidence in the case. Once in a while a doctor of large experience protests against the blind faith of the public—a faith shared by too many doctors—in laboratory reports.

In its issue for May, *The Diplomate* carries an article[1] by one of the world's most knowledgeable as to this subject. This article directs attention to the fact that the United States is taking as an example of syphilis control the plan of the Scandinavians, a plan, the oldest and most thoroughly systematised which " rests on the firmest foundation of national character, national homogeneity and national intelligence of any body of health regulation in the world. . . . . a plan which takes education for granted."

Attention is then directed to the experience of Great Britain and Holland in this field—an experience in which law and enforcement play a negligible part, yet in which practically equally as desirable results have been obtained.

Coming to the putting of a venereal disease control law to work, we are told firmly that no single test should be allowed to make a diagnosis of syphilis, and that there exists a serological syphilis which has virtually no public health significance, and there exists a clinical syphilis which has virtually no public health significance, and there exists a clinical syphilis which will not be confirmed by serological examination but which is readily transsmissible. These strong statements are made: "It follows, therefore, that law and regulatory practice in the control of syphilis which make the result of the blood test, checked or unchecked, false or true, the arbiter of decisions involving the civil rights and individual freedom of persons can not

1. Syphilis and The Law. J. H. St[illegible] and A. R. Ingraham Phila.

stand critical review in the courts of a liberty-loving and intelligently guided people. Such a law is liable to constant. . . . abuse not only through the shortcomings of the laboratory procedures. . . . . , but through misinterpretation which takes no account of clinical facts."

The article takes a look at the marriage laws of several of the States and remarks that realists can not ignore the fact that sexual intercourse having preceded application for the certificate is such a commonplace that it is a question whether withholding it has much preventive significance. It is said to be necessary that referee authorities be set up to whom doubtful cases are to be sent for expert opinion.

There is no question that the general public accepts "a positive blood test" as meaning that a person has syphilis and is dangerous to have about, or that it accepts " a negative blood test" as meaning that, as to syphilis, that person is pure as driven snow. One might well hesitate to put down his opinion as to the number of doctors whose belief is the same.

North Carolina law requires, as a preliminary to the granting of license to marry, that a licensed physician certify that he has examined the applicant by the usual methods of examination, and found no evidence of any venereal disease in the communicable stage. To this certificate must be attached *the original laboratory report of this serological examination from a laboratory approved by the N. C. State Board of Health.*

The implication is very clear that the decision whether or not the applicant has syphilis rests on the serological report alone. It is to be seriously doubted if any doctor will have the temerity, even if he have the knowledge, to certify that the applicant is free of communicable syphilis and attach to it a positive serum report; and who believes that a register of deeds would pay any attention to the certificate with such a report attached?

Nothing is said specifically about a dark-field examination, which certainly should be made. However, this test, too, is far from free from error.

Does some one ask: Do you expect omniscience? No, but we ask—not expect—that claims to omniscience be abandoned, and that all do the best that can be done in the present state of our knowledge.

Sending doubtful cases to a higher medical court strikes us as a sound solution of some of these vexatious problems. Blind, unquestioning acceptance of a serological report as proving that a person has or has not syphilis has done and is doing an enormous amount of injustice and injury.

If there be an authority, Dr. Stokes is an authority. Certainly he is an authority on syphilis within the meaning of the law; and he has published this information, put it within the reach of all doctors who diligently seek it.

The vast majority of doctors are eager to do good and not harm to those who come to them. Those few not moved by this consideration may well ponder the possible punitive results of ignorantly or wantonly injuring a patient or a candidate for matrimony.

The careful reading of the whole of the article so freely quoted would be good for all of us, might save our patients and ourselves much trouble.

Write Dr. John H. Stokes, University of Pennsylvania, a card requesting a reprint.

Since writing this far an article[2] on this subject by Dr. J. A. Kolmer has come to our attention. This eminent pathologist-clinician has found 8 to 20% of the serums of 36 persons with malaria to give positive[3] reactions. He says that to deny a man or woman license to marry on the evidence of a positive blood reaction alone is open to serious criticism and objection; that in the absence of clinical manifestations and a history at least suggestive of syphilis, the serologic evidence should be indisputable and based on at least two positive reactions by two or more methods; that *sooner or later serious legal complications are bound to arise from falsely positive reactions in applicants for marriage license;* that if the disease is of five or more years' duration, with thorough modern treatment for at least two years, the risks are almost infinitesimal even though the serologic reactions are positive. He would not have any man or woman under such conditions regard his or her life as permanently blighted as to possibility of marriage, as in most instances he or she may marry with reasonable assurance of safety for spouse and children.

He calls attention to the excellent laws requiring blood tests of pregnant women which have been passed by New Jersey, New York and Rhode Island, including provision for test at the time of delivery in those instances in which obstetric care has been delayed until labor has begun. We may well wonder if this is not a more valuable statute than that requiring examination before issuance of marriage certificate.

2 Premarital and Pregnancy Tests for Syphilis. *Jl. A.M.A.*, June 10th.
3. Positive for syphilis.

Planning Next Tri-State Meeting

The idea has been suggested to the officers of the Tri-State Medical Association of inviting a number of doctors distinguished in different fields of medicine and surgery for our meeting next February in Richmond. Indeed, the idea goes further, and contemplates adopting as a permanent policy

the idea of asking the six or eight members of the profession who have made the greatest contributions to clinical medicine and surgery, in its various branches, in the previous twelve-month. How is it to be decided who have made the greatest contributions? By getting the opinions of our own members.

It is not too early for members to begin sending in names. The kind of men we are to invite are very busy, very much sought after; and they are spoken for months in advance. A good many have the habit of taking Florida vacation in February.

We would like to hear from every member. This plan, properly carried out, will be a tremendous thing for the organization and for each member. Everybody will want to be a part of a medical society and attend its meetings when the greatest advances made in the year just past in every branch of the healing art will be presented by the men most responsible for the advances.

Be thinking it over and sending in names.

For A Basic Science Law for Us

Many of our improvements in legislation came from the West, whatever may be the contention of the Scriptures and Dr. Cyrus Thompson as to the Wise Men coming from the East.

For many years a number of the more intelligent of our Western States have had a law requiring that every person proposing to set up as a doctor or healer be required to show competent knowledge of the sciences on which rests the practice of the art of medicine.

Two or three years ago the State of Nebraska did away with one of its legistative houses, thereby fixing responsibility, destroying alibis and detaching from the public teat a hundred or so parasitic politicians. We hope to see this example followed in our own South, generally, as one State of the South has passed a basic science law. And we would like to see our legislature meet, introduce all bills to be considered at the session for that year, publish all these bills in all daily papers of the State, and go home for 30 days while the people have a chance to study the proposed measures.

A newly-passed Statute of the State of Florida is abstracted:

An act to be known as the Florida Basic Science Law states, that the term, "basic sciences" shall mean anatomy, physiology, chemistry, pathology and bacteriology. It provides that no person shall hereafter be permitted to take an examination for a license to practice the healing art or any branch thereof or be granted any such license unless he has presented to the authority empowered to issue such a license, a certificate of proficiency in the basic sciences as provided in this act. Persons now holding Florida licenses to practice the healing art are not affected by it.

The Governor shall, within 30 days after this act takes effect, appoint a board of examiners in the basic sciences consisting of five members from the faculties of the universities and colleges in Florida having 4-year courses. Not more than two members of the board shall be appointed from the faculty of any one of the universities or colleges.

To be eligible for examination one must be a citizen of the United States, of good moral character and a graduate of an accredited high school or of equivalent education.

Questions must not disclose the professional school an applicant has attended or the system of treating the sick he intends to pursue.

The passage and enforcement of such a law in every State of the Union offers the readiest means of further reducing the number of postponable deaths. The licensing of, and thus giving the stamp of the State's approval to, the various cults, with their weird theories of cause and cure, prevents a not inconsiderable number of our people from seeking cure while it may be had.

It is doubtful that even one legislator would say a knowledge of these basic sciences is not necessary to the intelligent practice of the healing art. Such knowledge will automatically cure nine out of every ten of any leaning toward any cult and thus such a falling-off of recruiting that soon the opposition to rational medicine by these "schools" would cease.

Prevention and cure would be less hindered, practice would be pleasanter, and fewer persons would die before their time.

This journal recommends that the officers for the current year of the State Medical Societies in this section place advocacy of a basic science law on their agenda.

DOCTOR JACOB FRANKLIN HIGHSMITH

Ever since it was learned that he could not preside over the meeting of the Tri-State Medical Association held at Charleston in February, Dr. Highsmith's friends had feared that his end was not far off. In the last few months, however, he seemed to have gained new strength, and when the end came he was enjoying a day on his farm in his home county of Sampson.

Forty years ago Dr. Highsmith built his first hospital. From time to time, as rapidly increasing patronage demanded, this hospital was added to or reconstructed. In 1926, he brought his own large experience and the best advice obtainable to bear on his final building project and the result

was the handsome and completely equipped Highsmith Hospital on Haymount Hill in Fayetteville.

Dr. Highsmith enjoyed many honors at the hands of his fellow-doctors. Early in the life of the American College of Surgeons, he was elected a Fellow. He had been president of the N. C. State Board of Medical E aminers and of the Medical Society of the State of North Carolina. At its meeting at Norfolk in 1937, he was chosen president-elect of the Tri-State Medical Association of the Carolinas and Virginia, to come to the presidency at the conclusion of the 1938 meeting to be held at Asheville. A few months after he became president he had a heart attack, which with its complications and sequelae kept him practically invalided to the end of his life. Much of this time he spent in Florida.

Few members of the medical profession of North Carolina have exercised more influence than Dr. Highsmith. He took an alert and constant interest in advances in medicine and surgery, and in civic affairs as well. He leaves three doctor sons— Drs. J. D., J. F. and W. C. Highsmith— to carry on his large work.

EARLY MEDICAL SCHOOLS: DOCTOR SIGNERS

(*Pharmacal Advance*)

The Medical College of Philadelphia, today a part of the University of Pennsylvania, was formed in 1765; the King's College Medical Department, today's Columbia, was founded in 1768; and Harvard had its first medical school in 1782. In 1768, the first medical degree, that of a B.M., was given to ten medical students at Philadelphia Medical College; the first M.D. was given to two students at King's College in 1770.

The first public hospital was opened in Philadelphia in 1752 . New York Hospital was ready for occupancy in 1776. The first medical societies were formed: State Medical Society of New Jersey in 1766, and Delaware State Medical Society in 1776.

Five doctors signed the Declaration of Independence: Joshua Bartlett and Matthew Thornton from New Hampshire, Oliver Wolcott from Connecticut, Lyman Hall from Georgia, and Benjamin Rush from Pennsylvania.

COMPARATIVE EFFECT OF COBRA VENOM AND MORPHINE

(D. I. MACHT, *The Medical Press and Circular, via Cur. Med. Dig.*, June)

The onset of analgesia is much slower after an injection of cobra venom but it endures much longer than that produced by opium alkaloids.

Various physicians who have treated particularly malignant diseases with the new drug have reported relief of pain, also a brightening of the patients' psyche.

Both laboratory and clinical results show that the moderate doses (5 to 10 mouse units) "do not injure either the circulation or the kidney or liver function. Pharmacological studies on the drug reveal that its toxicity is not great as compared with its therapeutic efficiency; in other words, the margin of safety is wide and the therapeutic index is a high one."

THE POWERS OF ADJUSTMENT to high and low external temperatures are greatly restricted as one grows older. —*Cannon.*

IN MEMORIAM*

DOCTOR WALTER CLARK ASHWORTH

By DR. C. M. GILMORE, Greensboro, N. C.

Dr. Walter Clark Ashworth, 70, of 116 South Spring Street, Greensboro, for many years one of the leading physicians in North Carolina and a prominent citizen of Greensboro since 1908, died December 10th at Wesley Long Hospital. He had been confined to bed since late in November and his condition had been critical some days.

Dr. Ashworth was born September 7th, 1868, in Randolph County, the son of William R. and Perlina Brookshire Ashworth. He received his medical education at the Ohio Medical College, Cincinnati, and the College of Physicians and Surgeons, Baltimore, subsequently taking post-graduate courses at the New York polyclinic. During later years, he studied in Berlin and Vienna.

Membership was held by Dr. Ashworth in the Guilford County Medical society, the North Carolina Medical Society, the Tri-State Medical Association, the Southern Medical Association and the American Medical Association. He served one year as president of the Eighth District Medical Society, territory of which embraces a number of counties, and a year in the presidency of the Guilford County Medical Society.

For fourteen years Dr. Ashworth engaged in the general practice of medicine in Kernersville, from which place he moved to Greensboro in 1908. Shortly afterward he established Glenwood Park Sanitarium and he was owner and manager of that institution up to the time of his death. He had been repeatedly honored because of his attainments in his chosen profession.

In 1894 Dr. Ashworth married Miss Birdie Sapp, of Kernersville, who survives. Two daughters, Mrs. Andrew Joyner, Jr., of Greensboro, and Mrs. Frank B. Morris, of Winston-Salem, and three grandchildren, Misses Lena Winston, Mary and Sarah Morris, of Winston-Salem, are living.

Throughout his residence in Greensboro Dr. Ashworth made his home at 116 South Spring Street. He exercised a lively interest in public affairs in his city, state and nation and steadfastly adhered to his convictions as to what he conceived to be right. He was known as a man of unusually strong character. During his early days as a physician, he used a horse and buggy in making calls, over a wide area, and old-timers happily recall his effective ministrations, given without stint and without thought of the hardships which they often entailed in adverse weather, given also

*A service in the meeting of the Tri-State Medical Associatiin of the Carolinas and Virginia held at Charleston, February 20th-21st.

with a disregard of hours. He contributed mightily to the alleviation of suffering and the restoration of health in countless cases.

Quoting from an editorial in the Greensboro *Daily News*: "Of this good physician, this useful citizen, it may rightly be said that he was true to the best traditions of the noble profession of which he was a leading member. No higher tribute than that could be paid to his memory."

Doctor Andrew Johnson Crowell

By Dr. Raymond Thompson, Charlotte, N. C.

A good many years ago I went to Charlotte to study medicine. One of the first members of the faculty to greet me and show an interest in my welfare was Dr. A. J. Crowell. His was the influence which decided me on going into the specialty for which he did so much, and of which he was such an ornament.

He loved his profession and his fellow doctors. Particularly he loved to extend a helping hand and say an encouraging word to young doctors. His vision was broad, his zeal unbounded. Few men anywhere have done more for the advancement of knowledge of his specialty. Few have contributed more to the relief of human suffering.

As medical student, assistant, associate and partner I was in almost daily intimate association with Dr. Crowell for nearly thirty years. For ten or twelve years of that period I had most of my Sunday dinners in his home.

Never have I heard from him anything unkind, or even uncomplimentary, about any doctor. Never have I seen him downhearted. A cheerful philosophy and a deep and happy religious faith combined to make his life joyous. The final months of suffering he bore with fortitude.

As a teacher, as a partner, as a friend, as an exemplar, he was all that I could ask.

Doctor J. A. Eason

By Dr. J. S. Rhodes, Williamston, N. C.

I can speak at first hand of the kind of man Dr. ason was, for we practiced together for five years. In all that time he was all that I could ask of a professional associate, everything that could be desired in a friend. He was cut down in his prime, and his taking away brought sadness to the hearts of all who knew him or came in touch with him in any relationship. It was a great privilege to be associated with him in practice; and an even greater privilege to have his intimate companionship and friendship.

"He gave his honors to the world again,
His blessed part to heaven, and slept in peace."

Dr. Lewis Burgin McBrayer

By Dr. E. A. Hines, Seneca, S. C.
Secretary S. C. Medical Association

It was my privilege to know Dr. McBrayer for more than forty years. My association with him as a fellow Secretary of an adjoining State Medical Society was intimate over a long period of time. Few serious problems in organized medicine ever came up in the Carolinas that we did not discuss, particularly the points affecting our own states. To me as Secretary of the South Carolina Medical Association he was a tower of strength as an adviser and friend. In the broader field of American medicine his counsel was available far beyond the borders of his native state. He was preëminently the loyal friend of the private practitioner of medicine and sympathetic with him in the social changes going on around him. It is difficult to estimate the greatest field of influence and activity in which Dr. McBrayer figured for he was a man of such versatile contacts. He was well known in the world of business. He early manifested a keen interest in public health and became the health officer of Asheville, the Capital of his native county. He was a member of the Board of Health of Buncombe County for many years. He soon became particularly interested in the tuberculosis problem and to the day of his death was in the front of the fight against this disease. Indeed he was a pioneer in the United States in this regard. As President of the North Carolina State Board of Medical Examiners from 1908 to 1914 he had a profound influence on medical education and thus participated in placing the state on the high pinnacle it occupies today. I really knew him best as Secretary of the Medical Society of the State of North Carolina and Editor-in-Chief of its notable volume of Annual Transactions.

Throughout his career as State Secretary he was a commanding figure in the Association of State Secretaries and Editors of State Journals of the American Medical Association. It was my pleasure to nominate him for the presidency of that body and he wielded the gavel with a mastery hand. At nearly all of these meetings we traveled together and roomed together. His contributions to this organization were of a high order. His ready wit and vast experience were instantly recognized by the members of the organization. He was a defender of the faith of the Fathers of Medicine handed down to us on many occasions. His courage on the floor was far beyond that of the average member. It is not too much to say that he was one of the most renowned State Secretaries in the United States and that his passing at the very height of his usefulness was not only an irreparable loss to the Tri-State Medical

Association of the Carolinas and Virginia but to untold thousands in many walks of life.

Dr. Japheth Edward Rawls

By Dr. Walter P. Adams, Norfolk, Va.

In the untimely death of Doctor Japheth Edward Rawls on October 14th, 1938, this society has lost a valued member. He was sixty-three years of age. He always fulfilled his medical, civic and home responsibilities with thoroughness and care. His fatal accident occurred while returning alone to Suffolk from a Richmond meeting of the Seaboard Air Line Railway surgeons. It is believed that a rear tire burst, causing skidding and overturning of his car. There were leg fractures, a crushed thigh, and undetermined internal injuries and he died shortly afterwards in the institution he has nurtured and loved so well. He is survived by his wife and eight children. Among his brothers and sisters is Dr. David L. Rawls, an associate at Lakeview Hospital.

After graduating in medicine from Bellevue Hospital Medical College in 1899, he came to Suffolk, where he founded Lakeview Hospital in 1905. Under his direction this institution has grown from a small hospital to be one of the largest in its vicinity.

Dr. Rawls was a widely known physician and surgeon and his ministrations won him respect from unnumbered friends in and about Suffolk. He was a member of his local, state and national medical societies, a Fellow of the American College of Surgeons, and Surgeon at Suffolk for the Seaboard and the Atlantic Coast Line Railways.

In his busy life he also found time to aid his fellow citizens along lines other than in his chosen profession. He was president of the Suffolk Chamber of Commerce, a past-president of the Suffolk Rotary Club and a member of the Suffolk School Board. His alma mater, Elon College of North Carolina, drafted him into service as trustee, as Alumni Association president, and editor of the *Alumni News*.

This diverse and useful record speaks for itself. His personal charm and usual pleasant greeting will be greatly missed by his many friends, colleagues and patients.

Doctor Washington Price Timmerman

By Dr. James H. McIntosh, Columbia, S. C.

Today with poignant regret I announce to you the death of one of the charter members of this Association,—that of Dr. Washington Price Timmerman, of Batesburg, South Carolina, which occurred on Saturday, December 24th, 1938.

Dr. Timmerman's membership in this body dates back to 1899—and to the best of my knowledge there are now only six of the original members left to us.. That means that only very few of us are that old in faithful membership. And during the forty years of his membership he has been present at practically every meeting of this Association.

Washington Price Timmerman was born on December 10th, 1869, in Edgefield County, South Carolina. He received his medical education in The Medical College of the State of South Carolina in the city in which we are meeting, being graduated in 1891.

After his graduation he returned to the near neighborhood of his place of birth; and his long and useful and busy professional life of forty-eight years was spent in the contiguous territory of Edgefield, Saluda and Lexington Counties. Here he was happy in the possession of a large coterie of loyal patients and faithful friends.

Dr. Timmerman was active in all of the progressive movements in medical affairs. He was held in high esteem by his professional brethren. He had served as President of his County Society and of his District Association; and he was prominent in his State Association.

His most marked characteristics were his friendliness; his sincerity; and his strongly developed tenacity of purpose. And those of us who knew him best are very sure that when he crossed over the river and came to the pearly gates Saint Peter welcomed him with that most blessed benison —"Well done, thou good and faithful servant. . . . . Enter thou now into the joy of thy Lord."

Dr. Isaac Manning Retires

Dr. Isaac Hall Manning, after 38 years of active service in the faculty of the University of North Carolina Medical School, retires as Kenan professor emeritus.

After graduation at Chapel Hill he became an industrial chemist. He entered the Long Island Medical College in 1893; did graduate work at Harvard and the University of Chicago; engaged in practice two years; and became professor of physiology in the University Medical School in 1901. Four years later he succeeded Dr. Richard Whitehead as dean. He resigned from the deanship in 1933 and returned to the post of professor of physiology.

Physicians from over the state, to the number of more than a hundred, assembled for a testimonial dinner. Among the speakers who paid tributes were Dr. W. H. Smith of Goldsboro, Dr. Wingate Johnson of Winston-Saeml, Dr. W. C. Davison of Duke University, Dr. Foy Roberson of Durham, Dr. Hubert Royster of Raleigh, Dr. J. B. Cranmer of Wilmington, and Dr. Reece Berryhill of Chapel Hill.

Dr. T. W. M. Long, Roanoke Rapids, Secretary of the Medical Society of the State of North Carolina, was the chief speaker at the graduation exercises of the School of Nursing of the Carolina General Hospital, Wilson, June 30th.

NEWS

Buncombe County Medical Society

Pres Griffin called to order the 11th meeting June 5th, 8 p.m., 68 members present.

Dr. W. S. Justice presented by means of lantern slides the End Results of Hare Lip Surgery.

Dr. J. W. Kinley read a paper on The Care of the Patient's Central Nervous System—discussed by Dr. L. G. Beall and President Griffin.

Dr Huffines then read from the evening paper that the County Board of Commissioners had requested that only emergency cases be admitted to the hospital on the County services. Dr. Huffines then moved that the committee on P. H. & L. be requested to meet both the county commissioners and the city commissioners to determine the reason for the reduction in hospital funds and report at our next meeting. This motion was seconded and passed.

Dr. Weisenblatt, requested data concerning the reason why it is impossible to hospitalize infectious disease cases in the city of Asheville; further discussed by Dr. Donald MacRae. President Griffin refefred this request likewise to the committee on P. H. & L.

The meeting was then adjourned and the Society was entertained by Dr. J. T. Saunders in hs new offices in the Arcade Building.

—G. W. KUTSCHER, JR., Secretary.

The Neuropsychiatric Society of Virginia held a meeting at the Cavalier Hotel, Virginia Beach, Va., June 14th.

Program:

1. Treatment of Brain Tumors, by Dr. Gayle Crutchfield, Richmond.
2. Psychoanalytic Theory and Practice, by Dr. Lawrence F. Woolley (Invited guest) clinical director of the Sheppard & Enoch Pratt Hospital, Towson, Maryland.
3. The Concept of Psychopathic Personality, by Dr. Jos. R. Blalock, Marion.
4. Is Mental Disease on the Increase, by Dr. O. B. Darden, Richmond.

Child Guidance Clinics in Winston-Salem and Charlotte have the services of a child psychiatrist from eight to ten days a month since the addition of Dr. Richard Frank Richie to the staff of the State Board of Charities and Public Welfare. Dr. Richie has been staff psychiatrist of the Nebraska State Child Welfare division. His new title is assistant director in charge of the children's unit of the Division on Mental Hygiene of the State Board of Charities and Public Welfare.

A portrait of Dr. David H. Tucker, professor of medicine from 1849 to 1869 in the Medical College of Virginia, was unveiled at the college June 14th. In 1863 Dr. Tucker was called to the bedside of Stonewall Jackson by Dr. Tucker's young cousin, Dr. Hunter McGuire. The painting was presented by Dr. Tucker's great-nephew, Dr. Beverley Randolph Tucker, Dr. Stuart McGuire spoke briefly and President Sanger accepted the gift for the college.

Dr. Fred M. Hodges, Richmond, has been named president of the American College of Radiology. Dr. Hodges served as president of the American Roentgen Ray Society in 1934, president of the Southern Medical Association in 1935 and secretary and chairman of the X-ray Sections of the American Medical Association and the Southern Medical Association.

Formerly president of the Richmond Academy of Medicine, Dr. Hodges is now president of the Virginia Radiologic Society.

A native of North Carolina, Dr. Hodges received his earlier medical education at the Medical College of Virginia. He was graduated from the University of Pennsylvania with an M. D. degree, and later did post-graduate x-ray work in Vienna.

Dr. Milton Block, for five years an officer of the Medical Corps of the United States army and for four years medical officer for CCC Camp Jerrico, entered private practice of medicine at Lexington, N. C. July 3rd. A native of Greensboro, Dr. Block received his A. B. degree from the University of North Carolina, and his medical degree from Tulane.

Dr. Lyndon F. Small and Dr. Nathan B. Eddy, of the U. S. Public Health Service, won the award of the American Pharmaceutical Manufacturers Association for valuable chemical research in 1939.

The award was made at the association's convention at Skytop, Pa., June 27th, in recognition of work on morphine substitutes which will reduce the danger of addiction. Dr. Small's research has been done at the University of Virginia and Dr. Eddy's at the University of Michigan.

Dr. Morton Morris Pinckney, Richmond, has been appointed chairman of the first-aid committee of the Richmond Chapter, American Red Cross.

Dr. Robert B. Taft, of Charleston, received the annual award of the South Carolina Academy of Scence at the annual meeting in Columbia April 28th.

ASAC

ELIXIR ASPIRIN COMPOUND

Contains five grains of Aspirin, two and a half grains of Sodium Bromide and one-half grain Caffeine Hydrobromide to the teaspoonful in stable Elixir. ASAC is used for relief in Rheumatism, Neuralgia, Tonsillitis, Headache and minor pre- and post-operative cases, especially the removal of Tonsils.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

Dr. V. A. Turner, lately of Tennessee, has been appointed by the Augusta County (Va.) Board of Supervisors to fill out the unexpired term of Dr. J. C. Neale as County Health Director. Dr. Turner has been working with Dr. Neale for several weeks.

Dr. Frederick Austin, Jr., son of Dr. Frederick Austin, Sr., coroner of the city of Charlotte, and grandson of Dr. J. A. Austin, long a prominent and popular practitioner of that city, has opened medical offices in the Independence Building, Charlotte.

Drs. Allan Brewton, W. P. Herbert, and Webb Griffith, attended the three day session of the Association of Southern Railroad Surgeons at Washington, D. C. Dr. Griffith was elected President of the Association.

Dr. Walter Johnson, Asheville, has returned from the meeting of the National Gastroenterological Association in New York where he discussed a paper on Intestinal Tuberculosis.

Drs. T. R. Huffines, W. L. Grantham, W. C. Lott and R. C. Bunts, Asheville urologists, attended the meeting of the American Urological Association at White Sulphur Springs, W. Va.

MARRIED

Miss Virginia Bailey Carter, of Lynchburg, Va. and Dr. Brooke Baylor Mallory of Lexington, Va., were married June 16th. Mrs. Mallory is a registered nurse and for the last few years has been on the staff of Virginia Military Institute Hospital, Lexington. Dr. Mallory was graduated from V. M. I. in 1930 and from the University of Virginia Medical School. He is post surgeon at V. M. I.

ELIXIR
DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*
Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

Dr. John Hamner and Miss Evelyn Michelle Shepherd, of Richmond, were married on June 25th.

Dr. Daniel Sumner Ellis, of Richmond, and Miss Eloise Goodman, of Newport News, were married on June 25th.

Dr. Paul McNeely Deaton and Miss Evelyn Goode, of Statesville, were married on June 22nd. Dr. Deaton will serve an interneship at Lankenau Hospital in Philadelphia.

Miss Louise Henrietta Berger, of Dumbarton, Va., and Dr. Claudio Rodriguez, of Newport News, son of ex-Governor and Mrs. Eloy Rodriguez, of Alajuela, Costa Rica, Central America, June 14th.

Dr. DeWitt Cornell Daughtry and Miss Lucille Carr, both of Clinton, North Carolina, were married in Richmond, June 6th. Dr. Daughtry is continuing his hospital work in Detroit.

Dr. Joseph Price and Miss Virginia Levering, both of Nashville, Tennessee, were married June 9th. The bride formerly lived at Guilford College and Dr. Price is a native of Birmingham.

Dr. Abram Jack Tannenbaum and Miss Leah Louise Baach, both of Greensboro, were married on June 10th.

Miss Joanna Ward Law of Austin, Texas and Dr. David William Martin, formerly of West Palm Beach, Florida, were married in Durham June 23rd. Dr. Martin is a graduate of Duke University Medical School and Mrs. Martin took a course in Laboratory and X-ray Technique at Duke. They will make their home in Durham.

DEATHS

Dr. H. A. Hall, of Front Royal, Va., died June 14th after an illness of a week.

Dr. Samuel H. Cannady, 72, who had been in retirement on account of poor health for the past several years, died at his home at Oxford, North Carolina, on June 22nd.

Dr. Robert H. Rowe, 57, died suddenly of a heart attack at his home at Abingdon, Va., June 14th. Dr. Rowe was born at Newton, N. C.

Dr. John Berry, aged 56, died at Southern Pines, May 25th. For many years he was a leading physician of Greensboro, but on account of poor health he had lived in retirement at Southern Pines for several years.

Dr. Robert L. Felts, Durham, died suddenly on May 27th. He was 68 years of age and his death was attributed to angina pectoris.

Dr. John Mortimer Hayes died in Baltimore on May 16th. Interment was made at Annapolis. He was known to his intimates as Dick. Dr. Hayes was a son of the Brigadier General Jack Hayes, United States Army, who spent his years of retirement at Morganton.

Dr. H. N. Abernethy, 74, of Charlotte, died on June 10th, while visiting at the home of his son in Gaston County.

Dr. Buckner Magill Randolph, 67, prominent retired Washington physician who was chief of medical service

In the emergency of deep anesthesia, collapse and barbiturate or morphine drug poisoning, inject 3 cc. Metrazol intravenously to restore the circulation and respiration. Repeat this dose, or continue with smaller subcutaneous doses.

Bilhuber-Knoll Corp. ORANGE NEW JERSEY

at Walter Reed Hospital during the World War. died July 1st of a heart attack. He attended the University of Virginia and was graduated from the Medical College of Virginia. He did post-graduate work in Germany and established a practice in Washington in 1904 after practicing in Richmond and Philadelphia. For a time he was pathologist to the Philadelphia Polyclinic Hospital. After the war, he was retired with the rank of colonel. He retired from active practice in 1930 because of ill health.

Our Medical Schools

University of Virginia

Dr. Oscar Swineford addressed the West Virginia Academy of Medicine meeting in Parkersburg, West Virginia on April 4th. His subject was The Diagnosis of Allergic Diseases.

On May 10th, Dr. Oscar Swineford delivered a lecture before a Post-Graduate Clinic in Arvonia, Virginia, under the auspices of the University of Virginia Extension Division. His subject was Chronic Arthritis. On May 24th, he gave a second lecture on Allergy in General Practice.

On May 13th, Drs. W. E. Bray and O. R. Kelley presented a joint paper entitled Prothrombin Studies, Especially in the Newborn before the American Society of Clinical Pathologists meeting in St. Louis.

On May 10th, Dr. J. M. Meredith addressed the monthly scientific meeting at the Medical College of Virginia on the subject of Brain Tumors. On June 7th he spoke before the James River Medical Society in Arvonia, Virginia, on Headaches.

On May 17th, Dr. E. W. Kirby addressed the Post-Graduate Clinic in Arvonia, Virginia, on the subject Urological Problems in Children. Dr. Staige D. Blackford discussed Gall Bladder Disease and Its Treatment.

Dr. H. B. Mulholland delivered a lecture on Carbohydrate Metabolism before a Post-Graduate Clinic in Lynchburg, Virginia, on May 19th. On May 22nd, he spoke before the Rockbridge County Medical Society meeting in Lexington, Virginia. His subject was Dehydration.

On June 7th, Dr. W. W. Waddell, Jr. spoke before the James River Medical Society, meeting in Arvonia, Virginia. His subject was Treatment of Severe Diarrhea in Infants.

Dr. Alfred Chanutin has been given a research grant of $2500.00 from the John and Mary R. Markle Foundation for studies on pressor substances with the aid of the ultra-centrifuge.

Mr. Charles A. Stone has contributed a gift of $2000.00 for the support of studies on the treatment of spontaneous hemorrhage in the newly born with Vitamin K by Dr. W. W. Waddell and for Dr. Chanutin's investigations of pressor substances.

Dr. Sydney Britton was awarded a research grant of $2500.00 from the Committee on Research in Endocrinology of the National Research Council for aid in his investigations of cortico-adrenal extract.

Duke

Dr. Molly Harrover Erickson, of the Montreal Neurological Institute, recently addressed the students and staff on "Psychological Studies Upon Individuals with Organic Disease of the Central Nervous System".

On June 5th, sixty-four students were graduated from the School of Medicine, twenty-three from the School of Nursing, and eighteen students and graduates of the School of Nursing received the degree of Bachelor of Science in Nursing. The following five medical school graduates were elected to Alpha Omega Alpha:—John M. Douglas, Colin A. Munroe, Joseph A. C. Wadsworth, Kenneth D. Weeks and Irving B. Wexler.

BOOKS

A New Print of LIFE AND LETTERS OF DR. WILLIAM BEAUMONT, by Jesse S. Myer, A.B., M.D., Late Associate in Medicine in Washington University, St. Louis; with an introduction by Sir William Osler, BT., M.D., F.R.S., Late Regius Professor of Medicine in Oxford University, England. *The C. V. Mosby Co.*, St. Louis, 1939. $5.00.

William Beaumont laid the foundations of our knowledge on digestion, and he built a good part of the superstructure. He did his work under the most trying and discouraging circumstances, at sacrifice of leisure and of money that he could ill spare.

This book carries the original story and, in addition, much that sheds light on Beaumont, the man.

Beaumont is certainly one among the few great research workers of American Medicine. His fame is secure. His "Life and Letters" should be in every doctor's library. The lessons of his life should be known to every doctor.

PRACTICE OF ALLERGY, by Warren T. Vaughan, M.D., Richmond, Va., 338 illustrations. The *C. V. Mosley Co.*, St. Louis, 1939. $11.50.

The author traces the development of what we know about allergy. He admits the complexity of the modes of study and expresses the belief that these will be simplified. He impresses it on his readers that, not the case of allergy, but the patient with allergy, is to be treated. The relationship of experimental anaphylaxis to clinical analogy is discussed at length. It is assumed that 10% of the population is afflicted with allergic diseases. House dust and cosmetics are factors of extreme importance. The normal tendency is toward gradual loss of specific sensitizations. They may disappear and be replaced by new ones. Control of basic predisposition independent of specific sensitization is predicted. Skin reactions to foods are not very reliable. The blood sedimentation rate affords no evidence of value. Preparation of test extracts is described. Trial dieting is a valuable method. Food substitution is often practicable. In allergic conditions due to pollens relief may be expected in 80 to 90%.

Dr. Vaughan has given us an encyclopedic text on a condition that afflicts a large portion of the population. It seems that he is little disposed to magnify the importance of his own specialty. His book is well designed to meet the needs of doctors who want to take care of their own patients.

Serum sickness, anaphylactic shock, drug allergy, plant dermatitis, contact allergy to chemicals and cosmetics are appropriately discussed. The pharmacology of allergy is given with a view to affording relief.

A TEXTBOOK OF SURGERY: By American Authors Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. Second Edition, Revised. 1695 pages with 1381 illustrations on 752 figures. Philadelphia and London: *W. B. Saunders Company*, 1939. Cloth, $10.00 net.

The concept of this work is that of supplying maximum information in least space. That 200 of the ablest of our surgeons put out a book of less than 2000 pages is proof alike that the 200 know their subjects well and that the editor knows how to use the blue pencil vigorously yet retain the substance of the contributions. The success of the first edition and the willingness of the authors again to collaborate account for this early second edition. Two of the contributors—Dr. Porter Vinson and A. Graham Mitchell, are of Virginia, one—Dr. Deryl Hart— of North Carolina.

Certainly it is hard to adequately cover the practice of surgery in one volume, but certainly *Christopher* does just this.

HEALTH OFFICERS' MANUAL: By J. C. Geiger, M.D., Dr. P.H., Sc.D., LL.D., Director, Department of Public Health, City and County of San Francscisco, California. 148 pages, illustrated. *W. B. Saunders Company*,

Philadelphia and London. 1939. Cloth, $1.50 net.

The scope of the book embraces organization of public health work; public health education; budget; fees and accounts; records and statistics; dealing with communicable diseases; child, mental and dental hygiene; social service; food inspection and marketing; sanitary engineering, and camp sites.

This outline will serve the health officer well, the part-time health officer especially well.

MENSTRUAL DISORDERS: By C. Frederic Fluhmann, B.A., M.D., C.M., Associate Professor of Obstetrics and Gynecology, Stanford University School of Medicine, San Francisco, California; Assistant Visiting Obstetrician and Gynecologist to Lane and Stanford University Hospitals; Fellow of the American Gynecological Society. 329 pages with 119 illustrations. *W. B. Saunders Company*, Philadelphia and London. 1939. Cloth, $5.00 net.

A well-balanced book which, while giving all that is known on removal of causes, by endocrine products or otherwise, does not fail to describe reliable methods of affording relief, whether or not the cause can be found and removed.

SHORT STATURE AND HEIGHT INCREASE, C. J. Gehring. *Harvest House*, 70 Fifth Ave., New York. 1939. $3.00.

We are told that in England country children grow taller than city children and that in America it is the other way 'round; that the first-born is apt to be the tallest of the brood; that children born in summer tend to grow higher than those of winter; that in the last half-century an average of two inches in height has been gained. The influence of race on individual inheritence is traced. Glands and growth, food and growth, sleep and growth, drugs and height, exercises and height, devices and height, posture and height—all these are chapter heads. The concluding chapters are on stature aids and psychological aids.

A unique book with great possibilities.

VARICOSE VEINS, by Alton Ochsner, B.A., M.D., D. Sc. (Hon.), F.A.C.S., William Henderson Professor of Surgery and Director of the Department of Surgery, School of Medicine, Tulane University of Louisana, and Howard Mahorner, B.A., M.D., M.S. (Surgery), F.A.C.S., Assistant Professor of Surgery, School of Medicine, Tulane University of Louisana. With 52 illustrations, 2 color plates. The *C. V. Mosby Company*, St. Louis. 1939. $3.00.

The authors call attention to the 3% incidence of varicose veins in the whole population, to the unsatisfactory results of treatment prior to 20 years ago, to the general gratification with the cures following the general use of improved injection treatment and the disappointment over the large number of recurrences. They go on to the investigations which demonstrated that no routine treatment can give best results because the causes are various. They tell us how to classify these cases, how to prescribe and how to carry out the treatment the individual case and the individual patient requires.

Appropriately, this excellent treatise is dedicated to the greatest of vascular surgeons, Rudolph Matas.

WHAT IT MEANS TO BE A DOCTOR, by Dwight Anderson. Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York. 1939. Cloth $1.00; paper cover 25c.

Emphasis is placed on the feeling of hopefulness when the doctor arrives and on how well it would be for persons to choose their doctors on something more than blind faith. A good deal of the book is the result of a questionnaire sent to 500 doctors, 287 of whom responded with their ideas of what a doctor ought to be. The reader is told in all seriousness the one prodigy made up his mind to be a doctor at the early age of 2 years. Two-thirds of the respondents said they would want their sons to be doctors

There is a good deal on the study of medicine, working one's way through, interneship, private practice, organized medicine and the doctor of tomorrow. The whole is a valid argument against State medicine.

CANCER HANDBOOK OF THE TUMOR CLINIC, STANFORD UNIVERSITY SCHOOL OF MEDICINE. edited by Eric Liljencrantz, M.D., Chief of Tumor Clinic, Stanford University School of Medicene; Consultant in Neoplastic Disease, United States Naval Hospital, Mare Island and U. S. Marine Hospital, San Francisco. Stanford University Press, Stanford University, Calif. Humphrey Milford, London. *Oxford University Press*. 1939. $3.00.

The material presented was assembled for instructing post-graduates at the Stanford School of

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

Medicine. The reader is told that the fate of the patient with cancer lies in the hands of the family physician, that there are many pitfalls in the grading of tumors, that there are human cancer families. The principles of radiation therapy are laid down and diagnosis and treatment of cancer of different parts and organs described.

The experiences of this Tumor Clinic makes rarely reliable teaching,

---

STANDARD BODYPARTS ADJUSTMENT GUIDE: Traumatic Injuries, Medical Fees, Evaluations. Insurance Statistical Service of North America, 542 Rush Street. Chicago. 1939. $8.00, single copy including 10 years' revision service.

The reader is told that the volume is the result of an effort to detail the nature and background of an industrial injury, or an occupational disease, so that persons called upon to deal with them could accurately appraise their significance. It describes a means of evaluating the medical angles of a case and the monetary aspects.

Among its features are: a composite coast-to-coast average of medical fees for every type of service; a description of traumatic and bone injury and their disability periods; a percentage method for evaluating loss-of-use conditions; a digest of regulations evolved under compensation statues; a concise analysis of occupational disease signs, symptoms, and environments; a readable text of 170 pages, and valuable anatomical charts.

The publisher's offer current changes in rate and table structures by periodic revisions.

A SHORT STORY OF CANCER OF THE BREAST AND OF THE UTERUS (2nd Edition) by Marion Ellsworth Anderson, A. B., M. D., Clinton, ~~Ohio~~. $1.00.

The author is a devoted admirer of Marion Sims; he has done much work in cancer, and he has written this booklet from an unusual angle. He tells us that the monograph is based on observations over a period of 27 years, all the writings on the subject in the *Journal of the A. M. A.* since 1910, a great many books, and conversations with many who have a great experience of cancer of these parts.

He desires that they be sold for $1.00 each the greater part of the profits go to a cancer fund to be known as the Sims-Cullen Cancer Fund, all of the funds derived from the sale of the brochure to physicians, dentists and nurses to be located at John Hopkins. If it should be considered the proper book for the laity, as many have already indicated, then all the funds derived from the sale to the laity must remain as a cancer fund in the state where sold but still bear the name Sims-Cullen Cancer Fund.

There is no profit motive. The author-publisher will supply any number of the booklets at cost to interested organizations, on the terms outlined.

MY DAYS OF STRENGTH. By Anne Walter Fearn. 279 pp. New York. *Harper and Brothers.* $3.00.

In these days when the battling pioneer woman must seem, perforce, almost an extinct species for want of new worlds to conquer, Dr. Anne Walter Fearn's memoirs, "My Days of Strength", bring the reader up short with the realization of how close to us are these magnificent creatures of fire and steel, some—like Dr. Fearn—scarcely five feet tall.

Born in Holly Springs, Mississippi, educated in Charlotte, North Carolina, a product of the old South, Anne Walter studied medicine in those early 90's when the old timers thought (as one of them said when a woman first began the practice of medicine in Virginia) that it was "obscene and indecent for a woman to be a physician", and when staring groups stood to watch one pass. Then her adventurous spirit agreed to substitute for a collegemate for a year in China—a year that lengthened out to 44 of vital, gruelling activity that would have exhausted a less stalwart heart.

There is no martyrdom in this book. The one-word cablegram she sent her mother upon her arrival in Shanghai might well be used as its key-note—"Delight". "Safe" had been the word previously agreed upon, but while she was by no means always safe throughout those years, the underlying and fundamental Delight never failed her, even in the face of grief, disappointment, discouragement and danger. It is Delight she passes on to her readers.

It is well that at once she pointed out that she went to China wholly as a physician pinch-hitting for a friend, and not as a missionary, for at times her unmissionary attitudes no doubt shocked her Methodist brethren in whose hospital she worked (and may shock her missionary-minded reader). But the practical quality of her Good-Samaritanism cannot be questioned.

Her book is full of amazingly living pictures of the beauty and the squalor that jostle each in that ancient country. Soochow, "Beautiful City", breathes its sweet-olive and jasmine night fragrances, and again from its canal streets rise every odor of human and animal disease—infected filth. The love and loyalty of the Chinese, their primitive, cruel superstition and the inexorable quality of their traditions; their intelligence and their ignorance; their wealth and their appalling poverty and hardship—all these come alive in this engaging book. The drive of Tai Foong (the Small Typhoon) as she was nicknamed, who started the first Chinese coeducational medical school, ushered into the world more than six thousand babies, operated single-handed under unheard-of conditions, and wept with grief-stricken parents, must rouse admiring courage in the most faint-hearted, just as surely as her infectious friendliness amalgamated opposing groups in cosmopolitan Shanghai where she spent the last thirty of her China years.

In Shanghai she operated her own hospital successfully on a shoe string, with the daring of a born gambler, and the life she lets us share with her shifts from the strictly Chinese scene to that of the great foreign population. But Delight continues to the end in spite of financial stress, epidemics, the Chinese revolution, repercussions of the World War, personal danger, unending work—and always countless babies.

Those forty-four years were a span of enormous change in China—traditional, social, political—and she marks them all for us with a vitality that keeps the reader's nose in the book with a tear or a chuckle for nearly every page.

Last month she died in California but her ashes will return to the land of her Delight.

—HENRIETTA WINFREY, Richmond.

DISCUSSION OF DR. D. T. SMITH'S PRESENTATION* ON NICOTINIC ACID

(No paper available because of informality of presentation)

DR. O. B. DARDEN, Richmond:

We have used nicotinic acid in a number of mild cases and in cases termed dietary deficiences and it acts well, in many cases marvelously well. Nicotinic acid has certainly proved itself an adjunct in treating alcoholic cases. We have not been able to do the experimental work that Dr. Smith spoke of though we have wanted to so supplement our clinical experience. We have used nicotinic acid along with pellagra diets and it has brought about good results. I have been very glad to hear this paper.

DR. BEVERLEY R. TUCKER, Richmond:

The work of Dr. Smith and Dr. Ruffin of Duke University on the use of nicotinic acid in the treatment of pellagra is highly creditable, and this present paper is another real contribution. In the last few years several remedies used empirically have proved of great value in treating certain diseases, *e.g.* insulin and metrazol in the treatment of certain mental diseases and nicotinic acid in pellagra. Just why and how any of them act is as yet uncertain. Nicotinic acid is produced by oxidizing nicotine and although it is a vitamine B complex and, according to Spies, seems to be found in certain foods, as yeast, wheat germ and liver, just what is vitamine B complex is not entirely clear, for it has been thought that the chief vitamine in yeast and liver is vitamine B_2.

The dosage of nicotinic acid is not entirely settled. We have used it in small, medium and large doses and have come to adopt 100 milligrams from two to four times a day as the standard dose for oral administration. Our experience with it, though not large, would indicate that the drug is more valuable in severe than in mild or doubtful cases—and that it should not take the entire place of other treatment.

I think also we can agree with Matthews of South Carolina that associated neuritis in pellagra is very little affected by nicotinic acid. (*Journal of the A.M.A.*, Sept. 24th, 1938). It is interesting to note that in 26 cases of pellagra in individuals who had other not associated psychoses, only the pellagra mental symptoms were affected by the administration of nicotinic acid. (Drs. Spies, Aring, Gelperin, and Bean, Cincinnati, Ohio; *Am. Jour. of the Medical Sciences*, Oct. 1938).

Holding as I do the theory that pellagra is a virus disease occurring in certain undernourished or specific-food-deficient individuals, I am wondering whether nicotinic acid acts more as a virus antitoxin or a viruscide than as a food deficiency supply agent. I am not as familiar as I would like to be with the etiology of black tongue in the dog, but I am under the impression that this condition may be of virus origin. However, the main question in Dr. Smith's excellent paper is not the cause of pellagra, but the effect of nicotinic acid in the treatment of the disease, and I feel we are indebted to him both for a better knowledge of nicotinic acid as a drug and for giving us his extensive experience in the treatment of pellagra with nicotinic acid. Of all the various remedies and diets which have been introduced into the treatment of pellagra, I am of the opinion that the administration of nicotinic acid is the most important—although it must not be relied upon alone.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

DR. WILLIAM DE B. MACNIDER, Dean of the School of Medicine of the University of North Carolina, has been elected to membership in the American Philosophical Society. This society was organized by Benjamin Franklin in 1743, and is the oldest society in the nation.

THE INJURED BACK

(E. B. MUMFORD AND F. C. REYNOLDS, Indpls., in *Jl. Ind. State* Med. Assn., July)

All low back conditions deserve a careful history and examination with a definite outline of treatment, always being on the lookout for those cases which do not respond to the more conservative means. 96% of all cases of the effort strain type recover in from one to four weeks with almost any type of treatment. It is the 4% that do not respond to conservative treatment in a reasonable length of time that make up the low back problem. In our hands no operative procedure has been very satisfactory. We emphasize great caution in the use of spinal lipiodol and stress that it should not be used until a probable diagnosis of ruptured intervertebral disc can be made from physical examination.

SYPHILIS, Too.—Mountain lad, with new job in cotton mill—"Doc, I got a breakin' out twixt my toes. Some fellas at the mill says syphilis breaks out anywhar an' that's got me worried." Mild case of epidermaphytosis. Reassuring talk. Purely as routine, blood sent to laboratory. Report—Kline 4-plus; Wassermann 4 plus.—

Bul. Greenville Co. (S. C.) *Med. Soc.*

NO MOUNTAIN DEW?

Dr. J. K. Stoddard, of Cashiers, N. C., says an angular fellow kept coming in for treatment for rattlesnake bite. Finally Dr. Stoddard got the following story: "Well, Doc, I been tryin' for a long time to graft a rooster spur on top of a rattlesnake's head so I can exhibit him as the only thing like that in the world. Every time I do it it seems to take for a while and then the snake starts a moltin' and the spur comes off with the skin. This mornin' I cum acrost two rattlers that wuz beauties and I picked them up in my arms so's not to injure their heads and danged if they both didn't start abitin' me."—*Greenville Co.* (*S. C.*) *Med. Bul.*

ANNOUNCEMENT

It has been my desire for the past several years to specialize in

ORAL SURGERY and DIAGNOSIS
(as limited to dentistry),
EXODONTIA and RADIOGRAPHY

During this period, I have spent many weeks under several of the leading Oral Surgeons in the United States. In addition to an internship of a year in the Nashville General Hospital at Nashville, Tenn., I have studied these subjects and have had practical experience in New York City at New York University and the Bellevue Hospital. After sixteen years of general practice of dentistry, I now feel that I am reasonably well prepared and can give the public good service in these matters.

GRADY L. ROSS, D.D.S., Independence Bldg, Charlotte

GENERAL

Nalle Clinic Building

THE NALLE CLINIC

412 North Church Street, Charlotte

Telephone—3-2141 (If no answer, call 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
Gynecology & Obstetrics.
EDWARD R. HIPP, M.D.
Traumatic Surgery
PRESTON NOWLIN, M.D.
Proctology & Urology

Consulting Staff

DOCTORS LAFFERTY & BAXTER
Radiology
HARVEY P. BARRET, M.D.
Pathology

General Medicine

LUCIUS G. GAGE, M.D.
Diagnosis

LUTHER W. KELLY, M.D.
Cardio-Respiratory Diseases

J. R. ADAMS, M.D.
Diseases of Infants & Children

W. B. MAYER, M. D.
Dermatology & Syphilology

WADE CLINIC

Wade Building
Hot Springs National Park, Arkansas

H. King Wade, M. D.	*Urology*
Charles S. Moss, M.D.	*General Surgery*
J. O. Boydstone, M.D.	*General Medicine*
Jack Ellis, M.D.	*General Medicine*
Frank M. Adams, M.D.	*General Medicine*
N. B. Burch, M.D.	*Eye, Ear, Nose & Throat*
Raymond C. Turk, D.D.S.	*Dental Surgery*
A. W. Scheer	*X-ray Technician*
Etta Wade	*Clinical Pathology*
Mary Alice Phillips	*Clinical Pathology*
Marjorie Wade	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building **Charlotte**

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building **Charlotte**

HERBERT F. MUNT. M.D.
FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS
Nissen Building **Winston-Salem, N. C.**

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., AUGUST, 1939 No. 8

Sulfapyridine in the Treatment of Lobar Pneumonia*

Wm. H. Kelley, M.D., and J. W. Regan, M.D., Charleston, South Carolina
Medical College of the State of South Carolina

FOLLOWING the introduction in 1937 of sulfanilamide in the treatment of streptococcal and certain other bacterial infections, the chemotherapeutic possibilities of many of the related sulfanyl compounds have been investigated. In May 1938, Whitby reported that among these the pyridine derivative of sulfanilamide—Sulfapyridine (M. & B. 693, Dagenan)—exhibited effective chemotherapeutic activity in the treatment of certain experimental bacterial infections including those produced by several different types of pneumococcus. Shortly afterward Evans and Gaisford reported on the clinical trial of sulfapyridine in 100 cases of lobar pneumonia with a resulting mortality rate of 8% as compared with 27% in 100 untreated control cases observed during the same period. Largely because of the lesser death rate in the treated cases, the authors concluded that sulfapyridine exerts a beneficial effect upon the course of lobar pneumonia. Subsequently, both Fleming and Long have in general confirmed the findings of Whitby in experimental pneumococcus infections treated with sulfapyridine and have shown in addition that the drug inhibits the growth of pneumococcus in vitro. Likewise, current reports of clinical trials of sulfapyridine in lobar pneumonia by Flippin and coworkers, and Barnett and coworkers and others add confirmation to the results of Evans and Gaisford. Thus it appears that the clinical trial of sulfapyridine has an adequate background of animal experimentation and evidence from clinical observation though incomplete is rapidly accumulating to show that sulfapyridine is an effective drug in the treatment of pneumococcus pneumonia.

Sulfapyridine is a fine, white, crystalline powder, practically odorless and tasteless, and soluble in water in 1:1000 parts. It may be administered by mouth or by hypodermoclysis in 1:1000 solution prepared according to the technique described by Long for making solutions of sulfanilamide for injection. Within an hour or so after oral administration the drug may be detected in the blood where it is found in two forms—a portion unchanged and the remainder in the conjugated or acetylated form. With suitable standards the blood concentration of the drug may be measured colorimetrically after a method similar to that used for sulfanilamide. It is excreted largely through the kidneys, at a rate reported to be slower than that at which sulfanilamide is eliminated. The cost of the drug required in each case is at present less than one-fourth that of serum therapy.

To date we have treated 18 cases of pneumococcus lobar pneumonia with sulfapyridine. In each the diagnosis of pneumonia from the clinical findings was confirmed by x-ray examination; and by the demonstration of significant numbers of pneumococci of specific type in the sputum or blood cultures. The cases were selected in that patients presenting the accepted indications for specific serum therapy were not subjected to this experimentation. More recently we have employed sulfapyridine in lobar pneumonia of types susceptible of serum therapy when the patient was elderly, had another disease in addition or was first seen late in the course of the infection. Sulfapyridine only was given in cases of this kind in which serum therapy according to our experience is less often successful.

The dosage of sulfapyridine which we have employed was 2 grams (30 grains) during the first 4 hours followed by a gram at 4 hour intervals until the temperature had been normal for 2 or 3 days and then 4 grams daily in divided doses for the next 2 to 4 days, depending somewhat upon the progress of the patient. The total amount of sulfapyridine required for each patient has not often exceeded 30 grams. In addition to the sul-

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

fapyridine therapy, our cases received the usual general and symptomatic care for lobar pneumonia, including fluids to 3 to 4 liters daily, codeine or morphine for discomfort, and oxygen by inhalation as indicated. The precautions taken with these cases were in general those which have been found necessary for the safe administration of sulfanilamide. Drugs containing the sulfate radical were withheld. Daily hemoglobin determinations and leucocyte counts were done to anticipate drug intoxication and in addition blood cultures observations on the blood concentrations of sulfapyridine and certain other clinical features were made out of curiosity.

Table I

Type	Pneumonia Cases Treated With Sulfapyridine					
	Primary	Secondary	Bacteremia	S*	D*	Total
I	5	2	3	7	0	7
III	2	0	1	1	1	2
IV	2	0	2	2	0	2
V	0	1	0	1	0	1
VI	0	1	1	0	1	1
VII	1	0	1	1	0	1
IX	1	0	0	1	0	1
XVIII	2	1	0	3	0	3
Totals	13	5	8	16	2	18

*S—Survived
*D—Died

Of the 18 cases, 6 were due to Type 1 Pneumococcus, 2 to T-III, 2 to T-IV, 1 to T-V, 1 to T-VI, 1 to T-VII, 1 to T-VIII, 1 to T-IX, and 3 to T-XVIII. In 12, pneumonia was the primary disease, while in 6 it occurred secondary to preceding chronic systemic disease or to pregnancy. In 7 cases pneumococci were cultured from the blood stream.

Results

Of the 18 cases, 16 recovered without complication and 2 succumbed. The primary cases of pneumococcus pneumonia with negative blood cultures uniformly showed a favorable response to sulfapyridine therapy. In some the course of the illness appeared to have been cut short. A sharp fall of the temperature to normal with corresponding slowing of the pulse and respiratory rates usually occurred within 36 hours after treatment was started. Most patients then lost their chest pain and felt relieved. The characteristic moist crackling rales of resolution appeared over the consolidated lung areas and cyanosis, when present, cleared as soon as defervescence took place. Leucocytosis tended to increase during the treatment.

Among the 8 bactermic cases of lobar pneumonia 6 patients recovered and 2 died. The 6 patients surviving pneumonia with bacteremia showed in general a favorable, though less dramatic response to sulfapyridine therapy than occurred in uncomplicated cases. In these a longer time was required for the recovery although positive blood cultures as a rule became negative within 24 to 48 hours. It is noteworthy that the drug had to be given in maximal doses and for a longer time in cases with bacteremia. Premature reduction of the dosage in one case resulted in a recrudescence of symptoms with return of the bacteremia which disappeared again upon resumption of larger doses of the drug.

Of the two fatalities, one was a 32-year-old negress with Type III lobar pneumonia involving the lower lobe of the left lung, whose treatment was begun during the third day of the infection. On the next day the temperature declined, and the blood culture which showed 40 colonies of Type III pneumococcus per c.c. on admission contained fewer than 1 organism per c.c. On the following night when she appeared to be improving, pulmonary edema rapidly developed and she died within a few hours. The remaining fatal case was that of a 65-year-old negress who had a Type VI pneumonia with consolidation of portions of both lobes. She showed in addition to lobar pneumonia the usual signs of well advanced arteriosclerosis. Treatment was started on the third day of the infection. Although the patient who was delirious never regained full consciousness, the temperature, pulse and respiratory rates declined and the blood culture became negative. The clinical picture seemed to change to that of the well known hypostatic pneumonitis of the aged with a gradual downhill course to death. Autopsy was refused in both fatal cases.

The 5 cases of secondary pneumonia showed no important differences from the others in their response to sulfapyridine therapy. Obviously the outcome in these was influenced in large part by the nature of the underlying disease.

Others have reported that the absorption of sulfapyridine is irregular and our observations on the blood concentrations seem to bear out this fact. There was variable rise in the blood content of sulfapyridine from 0.6 mgms. to 8.6 mgms. % during the first 18 hours of administration of the drug. Afterward there was considerable fluctuation in the free sulfapyridine values of the blood depending upon factors which have not as yet been identified.

In agreement with the findings of Flippin and his coworkers we have not been able to correlate closely the concentration of the drug in the blood with therapeutic response in these cases. Certain patients with low blood concentrations of 1 to 2 mgms. % improved as promptly as those with higher blood values of 8 to 10 mgms. % or above. It is of interest that the highest blood concentrations of sulfapyridine were observed after administration of the drug by hypodermoclysis.

In the few cases examined, the time necessary for complete elimination of sulfapyridine has been longer than is usually required for the excretion of sulfanilamide, which is in accord with the findings of Long. The slow excretion makes it hazardous to give sulfapyridine in the presence of edema, or kidney damage.

Marshall has found that sulfapyridine in its soluble form is more toxic than sulfanilamide. The toxic symptoms thus far attributed to sulfapyridine are in general those produced by sulfanilamide: headache, dizziness, cyanosis, methemoglobinemia, nausea, vomiting, diarrhea, dermatitis, leukopenia and hemolytic anemia. Among our cases nausea and vomiting apparently from gastric irritation have been the most troublesome side effects of sulfapyridine. The majority of cases had nausea and vomiting at some time or other during treatment. The best measure which we have thus far found for combatting the nausea is to omit the drug by mouth and administer 2 or 3 one-gram doses by hypodermoclysis at 6-hour intervals. It is difficult in so few cases to evaluate cyanosis, but when present before treatment was started it has usually cleared up with improvement and in the cases examined no methemoglobin was found in the blood at that time. Other toxic effects attributable to sulfapyridine were not observed.

Although our impressions from the use of sulfapyridine in the treatment of lobar pneumonia are thus far favorable, no conclusions can be drawn from the results in the small number of cases studied. The accumulated case reports in the literature indicate that sulfapyridine will prove to be a therapeutic agent of great value in lobar pneumonia. Because of its wider application and lower cost, sulfapyridine promises to displace specific serum therapy as the measure of choice in the treatment of pneumococcus lobar pneumonia. However, serum therapy will remain a valuable adjunct in cases in which sulfapyridine is either ineffective or contraindicated by reason of drug hypersensitiveness. Caution must be taken against the indiscriminate use of sulfapyridine for in almost 5 per cent of individuals, sulfanyl dyes may produce drug intoxication of grave consequence.

Foot Note:—Since this paper was given gefore the Tri-State Medical Association, February 20th, a total of 50 cases of lobar pneumonia have been treated at the Roper Hospital with results in agreement with those described above.

Discussion

Dr. D. T. Smith, Duke University:

It was a great pleasure to hear this excellent paper. We have had a limited experience with sulfapyridine at Duke. In medical cases we have used serum and solutions. The temperature rise when the drug is withdrawn too soon, I think is significant. The drug does not kill outright but inhibits growth. The drug should be continued until the body makes itself immune. . . . . I think the ideal treatment will be combination of serum and sulfapyridine. I would give the serum immediately. You can give a relatively small amount of serum and the expense will not be out of the question. I am more optimistic than Dr. Kelley dared to be. It will not cure 100% however. As to complications—we have encountered nausea and vomiting, and I am wondering what would Dr. Kelley say!

Dr. J. M. Hutcheson, Richmond:

I have been very much interested in Dr. Kelley's paper. I heartily endorse his conservative attitude toward the use of this drug. I have confined the use of this drug to those cases of Type III. My observations are limited to ten cases treated. In three of them the blood reactions disturbed me. The first patient had a white blood count above 18,000; on the second day it dropped to 8,000. Having seen two fatalities I discontinued the drug and the leukocyte count promptly rose. When the drug was resumed the cells dropped again. The drug was given intermittently from then on.

In another case the leukocytes dropped to 6,000. When the drug was discontinued they went up. When the drug was resumed they dropped again. I believe it is dangerous to draw any conclusions about pneumonia from a few cases.

Dr. Wm. H. Kelley, closing:

Dr. Smith has called attention to the omission of mention of toxic poisoning. The only symptoms worth mentioning that we have had are nausea and vomiting. There is always vomiting at some period in the time the drug is taken. Sometimes it is very slight, sometimes violent and continued with patient upset a good deal. We are able to treat all cases by hypodermoclysis and give saline along with it. We have had to discontinue giving the drug by mouth temporarily, in some cases, to avoid or stop vomiting. Severe complications are only occasionally seen, as we have observed so far.

Why People Go To Cultists

(R. P. Knight, Topeka, in *J. Kans. Med. Soc.*, July)

Physicians, in trying to be honest fail to meet the patient's need to be assured of help against the destructive process within him which has aroused his anxiety. People like to be rubbed and massaged, and they often feel much better after such measures are used, but aside from getting a massage from the nurse when bedfast in the hospital, they find it hard to get such soothing procedures perscribed by physicians. They must go to masseurs, or to osteopaths or chiropractors, or to spas where a good rub-down is included. Physicians are too uninterested in the story of his trouble the sick patient wants to tell. If he is afraid of going to a psychiatrist for fear that will stigmatize him, he must find the sympathetic ear of his minister, or of a Christian Science practitioner, or of a charlatan "adviser" on personal problems.

Cults must be taken seriously by the medical profession, not only in order to combat their encroachments on medical practice, but more especially to understand the psychological factors which cause people to go to cultists. In order to progress further toward their scientific goal, physicians must espouse a higher scientific attitude which tries to understand everything about the patient's behavior asd feelings in addition to his structure and physiology. When that goal is reached, every patient, regardless of the unscientific character of his thinking, behavior, and complaints, may expect to find scientific understanding and scientific treatment in his physician.

The Surgical Management of Uterine Prolapse and Associated Benign Pathology* **

EDWARD H. RICHARDSON, M.D., Baltimore

A SURVEY of the voluminous literature concerned with genital prolapse reveals the significant fact that from the early beginnings of pelvic surgery down to the present time there has continued to appear an almost unbroken succession of articles dealing with its various component problems. This sustained and intensive study has been immensely productive. So much so that we now possess not only all of the essential anatomical, etiological and pathological data involved in the various types of prolapse but also sound surgical principles to guide us unerringly in the application of reconstructive therapy. Nevertheless, on the basis both of numerous statistical reports and of frequent personal observations in an active gynecological clinic, I am forced to conclude that widespread unfamiliarity with these fundamental facts is primarily responsible for the humiliating percentage of recurrences so frequently encountered. Most of these are directly chargeable to the exercise of faulty surgical judgment in the adaptation of a suitable plan of corrective surgery to the specific needs of the individual patient.

Now what precisely are these guiding principles that have been so laboriously acquired during the past sixty years through the united efforts of an imposing list of distinguished anatomists and gynecologists and that can be confidently relied upon to safeguard us from the many pitfalls inherent in this branch of reconstructive surgery?

First of all, we must comprehend that uterine prolapse is essentially a vaginal hernia. Furthermore, that because of normal anatomical relationships it cannot occur without associated alterations in adjacent structures. The relative degree of alteration involving the various anatomical units is subject to the widest possible variation. Thus we encounter all gradations from a slight, first degree descensus of the uterus to complete procidentia. Correspondingly, the associated benign pathology varies from a slight degree of perineal relaxation with a mild cervicitis to extreme degrees of hypertrophy, elongation, chronic infection and ulceration of the cervix together with benign disease of the corpus, pronounced cystocele, impairment of the vesical sphincter, urethrocele, a completely broken down perineum and pelvic floor, rectocele, enterocele and complete inversion of the vagina forming a large hernia sac.

Our second guiding principle, therefore, is that, since genital prolapse presents such a varied assortment both in type and degree of visceral herniation, any intelligent reconstructive attack must be based primarily upon an intimate knowledge of normal supporting structures and their functional integration. The steps by which this knowledge has been gradually acquired have recently been traced in valuable publications by both Ward and Farrar. From a long succession of exact anatomical and clinical studies we have learned that the pelvic organs are normally supported by two pelvic floors, a lower and an upper one. The lower one consists of a strong musculofascial diaphragm which closes the pelvic outlet. It is composed of two well integrated layers, the superior one of which includes the levatores ani and coccygeus muscles and their fasciae, while the inferior one is composed of the triangular ligament, the ischiocavernosus, bulbocavernosus, transversus perinei and sphincter ani muscles together with their fascial attachments. The upper pelvic floor may be conceived of as consisting of two suspension bridges composed of musculofascial and elastic tissue which stretch across the true pelvis at right angles to each other; the anteroposterior bridge is constructed of the pubocervical fascia anteriorly, which extends horizontally from the pubic bones to the supravaginal portion of the cervix, and of the uterosacral ligaments posteriorly, which pass from the same segment of the cervix backwards, encircle the rectum and are attached to the mid-section of the sacrum; the transverse bridge is constructed of the transverse cervical ligaments of Mackenrodt or cardinal ligaments occupying the basal portions of the broad ligaments and radiating from their strong cervical attachments outward to the lateral and posterior pelvic walls. Both of these bridges encircle the cervix and upper vagina where they fuse to form the main supporting mechanism of the uterus and vaginal vault. It is to be noted that both the upper and the

*Read by invitation before the South Atlantic Association of Obstetricians and Gynecologists, Charleston, S. C., February 10, 1939.

**From the Department of Gynecology of the Johns Hopkins University and Hospital.

lower pelvic floors are perforated by three tubular structures, namely, the urethra, the vagina and the rectum, and that it is particularly along the walls of these units that the various types of vaginal hernia develop. Through intelligent application of this rich heritage of anatomical fact to the vexing problems often presented by genital prolapse we are now able to discover for the individual patient exactly which supporting units have given way and what combination of herniae have resulted. Thus we are led to postulate a third guiding principle in formulating our plan of restorative therapy. Namely, that no two patients present identical problems and, therefore, no single operative procedure is applicable to all. Uniform success in the management of any considerable group of these herniae is impossible of attainment except through accurate diagnosis of individual requirements and judicious choice with skilful utilization of whatever combination of corrective measures is indicated. Routine employment of any stereotyped operation, no matter how meritorious it be, is sure to prove disappointing and, because of numerous failures, to bring both the surgeon and the operation into disrepute.

Genital prolapse may be congenital in origin due to inherent weakness or developmental defects in the supporting structures. By far the larger group of these herniae, however, are acquired and are directly attributable to such factors as repeated childbirth trauma, mediocre obstetrical care, faulty and deficient food, economic struggle, sustained hard work, and postmenopausal atrophy of supporting units. Furthermore, these and other factors often combine to bring about coexisting complications both local and remote which require a comprehensive therapeutic program, one that embraces the combined efforts of both medical and surgical colleagues. It cannot be too strongly emphasized that each one of these patients should first be hospitalized sufficiently long to undergo a thorough preliminary general study and adequate preparation for operation. Many of these women are also the victims of cardiovascular and renal disease, or of diabetes, obesity, anemia or undernutrition. Furthermore, they are often physically exhausted and nervously bankrupt. Not only so, but in addition to the genital prolapse one frequently finds vulval dermatitis, edema, impaired circulation in prolapsed structures, gravity ulcers and infections of the cervix. All such conditions constitute a serious menace to the success of any major corrective procedure and, indeed, if undertaken to life itself. Therefore, it is imperative that they be completely eradicated and associated systemic disease be got under control by appropriate preoperative care. Other factors of equal importance are that discriminating judgement be exercised in the choice of the anesthetic, that the operative field be prepared with meticulous care and only by individuals experienced enough to realize the vital importance of this step and that diligent and enlightened postoperative care be provided. Our fourth guiding principle, therefore, imposes a comprehensive therapeutic program, one that embraces the preoperative assembly and utilization of every possible fortifying factor, the judicious choice and expert administration of the anesthetic and efficient postoperative nursing and medical care.

We come now to a discussion of the various operative procedures which are most widely employed to-day in the treatment of genital prolapse.

Our fifth guiding principle divides all women afflicted with genital prolapse into two age groups. First, younger women whose status requires partial or complete preservation of reproductive physiology, *i.e.,* menstruation, optional coitus and further childbearing. In this group, if due consideration is given not only to the extent of damage which the reproductive units and adjacent structures have suffered in consequence of trauma and associated disease but also to the individual patient's physical condition, her social and economic status, the number of living children and the hazards of previous pregnancies and confinements, little difficulty will be experienced in arriving at a decision regarding the operative indications. Commonly they include the application of conservative therapy to a damaged and infected cervix; plastic repair of the pubocervical fascial plane to overcome a small cystocele and posterior colporrhaphy, together with an efficient suspension of the uterus by the abdominal route. The question of permanent sterilization of these women is often a pertinent one to be decided only after careful consideration of all factors involved. Furthermore, before performing therapeutic sterilization it is wise always to safeguard oneself, after fully explaining the basis of the recommendation, by written consent of both husband and wife signed in the presence of two witnesses. One must also be careful to conform to the requirements of state laws in this matter. But the surgical problems presented by this group of younger women are relatively simple and the corrective operations indicated are not difficult to perform.

Much more complex by contrast are the problems with which the pelvic surgeon is confronted in the advanced stages of vaginal herniae so frequently encountered in elderly women. Collective experience has abundantly demonstrated that even simple abdominal operations are far less well borne by these patients than are the much more exten-

sive vaginal procedures. This fact, coupled with the inevitable necessity of supplementing any type of abdominal operation with extensive vaginal reconstructive work performed either simultaneously or in two stages, has led to the gradual development of a number of excellent plans which undertake to reestablish adequate and permanent mechanical support for the several anatomical units involved and to eliminate also any coexisting pathology.

The operations most widely employed to-day in the treatment of these herniae in older women are (1) total vaginal hysterectomy, performed according to individual preference for any one of several well established methods and supplemented by central fusion and anchorage of the ligamentous stumps, high obliteration of the culdesac, reconstruction of the pubocervical and rectovaginal fascial planes and of the pelvic floor; (2) the Watkins interposition operation; (3) the Manchester or Fothergill procedure; (4) the Curtis advancement operation; (5) the Neugebauer-LeFort colpocleisis; and (6) total colpectomy.

Colpocleisis and total colpectomy appear to have grown in favor within recent years and excellent results are reported by those who have had considerable experience with these procedures. It seems to me, however, that they are applicable by preference only to old, feeble women afflicted with complete procidentia or with inversion of the vagina following total hysterectomy. So that while they undoubtedly possess distinct merit and have a definite field of usefulness they should be resorted to only in the poor surgical risk group or when there is scant likelihood of success in attempting to achieve a more normal anatomical reconstruction.

The Watkins interposition operation enjoys a well deserved popularity, but discriminating judgment must be exercised in its use and its limitations must be clearly recognized. If it is performed during the childbearing period, permanent sterilization of the woman must be included as an essential part of the technic. Moreover, the uterus must not be large and it mus be normal in other respects. The degree of prolapse should be only moderate and care should always be taken to exclude associated carcinoma by curettage. It was primarily designed to correct cystocele unassociated with marked herniation of other pelvic units, although its utilization has been much extended and it is to-day a favorite operation of many excellent pelvic surgeons. Even when rationally employed, however, it must be admitted that an interposed normal uterus remains a potential focus of both benign and malignant disease subsequent treatment of which either by surgical extirpation or irradiation involves extraordinary technical difficulties as well as greatly increased hazard of serious complications and sequelae.

Likewise the Manchester or Fothergill plan and the Curtis advancement operation possess many attractive and extremely useful features. But they too, are subject to most of the limitations and defects that are inherent in the Watkins technic.

Partly because these less extensive operations fail to meet the complicated requirements of advanced grade genital prolapse and also because one so frequently encounters in them either a diseased cervix or corpus or both, total vaginal hysterectomy is very widely employed in the treatment of these patients. Ward overcame a serious defect in the Mayo operation when he added to it high ligation and amputation of the culdesac peritoneum with plication of the uterosacral ligaments to correct enterocele, and anchorage of the upper border of the united broad ligaments to the periosteum of the pubic rami to give additional anterior support beneath the bladder. But any active gynecological clinic will supply a lamentable percentage of partial or complete anatomical failure in attempts to cure advanced grade genital prolapse by total vaginal hysterectomy as it is executed by and large to-day. Recurrences include all grades from very small to very large cystocele, rectocele, enterocele and, finally, complete inversion of the vagina. Such observations impressed upon me the desirability of constructing a composite operative plan that would combine the best features of total vaginal hysterectomy with those of the several transposition methods and at the same time would eliminate the humiliating percentage of partial failures chargeable to the former as well as the potential dangers left lurking in the latter ones.

Such a plan must be comprehensive in its scope having for its objective (1) riddance of the hypertrophied and diseased portion of the cervix; (2) extirpation of the corpus uteri, together with the tubes and ovaries if indicated; (3) optional destruction or excision of any remaining cervical canal epithelium; (4) minimal trauma and devitalization of structures later to be utilized for reconstruction purposes; (5) preservation of an assured and adequate blood supply to these several units; (6) total ablation of associated enterocele through high obliteration of the culdesac of Douglas; (7) rational utilization of all supporting structures that experience has demonstrated to be helpful and dependable; namely, the basal portions of the broad ligaments with their extraordinarily strong cervical attachments, the pubocervical fascia, the uterosacral and round ligaments,

the fascia of the rectovaginal septum, as well as the muscles and fascial layers of the lower pelvic floor and perineum; (8) reestablishment of a vagina of normal depth and calibre; (9) restoration of normal anatomical relationships.

In the spring of 1937 I presented before the American Gynecological Society the detailed technic of a composite operation which fulfils all of these requirements. The inherent defects chargeable to each one of the well established operations discussed above become conspicuously obvious upon a critical comparison of the objective aimed at with that ultimately attained. Briefly stated, the surgical problem presented by genital prolapse involves: first, complete elimination both of actual and potential disease and, second, restoration with permanent stabilization of normal anatomic relationships. Judged by this standard both colpocleisis and total colpectomy, while possessing undoubted merit, must be regarded as last resort measures which, even if objectively efficient, are both subjectively and anatomical far from ideal. The entire group of transposition operations are open to the objection that they leave the uterrus as a potential source of later benign or malignant disease and tremendously augment the technical difficulties of successfully dealing with either. In the execution of total vaginal hysterectomy the most dependable supporting structures are first devitalized by the application of crushing clamps plus division and ligation with constricting sutures; these same impaired structures are then relied upon to furnish the central and main support of the entire reconstructive plan.

Now my composite operation, built up entirely of borrowed units by a process of discard and selection, avoids the objections to the commonly used procedures noted above. By utilization of the time honored high amputation of the cervix coupled with subtotal vaginal hysterectomy, it eliminates existing and potential uterine disease, thereby also relieving the supporting structures of considerable dead weight; by preserving intact that segment of the cervix to which are normally attached the cardinal and the uterosacral ligaments together with the sturdy pubocervical fascia forming the upper pelvic floor, ideal conditions are created for adaptation of the several transposition operations; plication of the vesical sphincter is easily executed; accurate identification and dissection of the pubocervical fascia permits imbrication of this valuable supporting unit beneath the bladder neck and urethra in accordance with the established principles of hernioplasty; suture of the round ligaments into the upper angles of the cervical stump provides additional lift and support; adequate circulation to the cervical stump and attached structures is assured through preservation of the adjacent main trunks of the uterine vessels and their branches; the ureters are not endangered by any step of the operation; obliteration of the culdesac and plication of the uterosaral ligaments for associated enterocele are readily effected; and, finally, reinforcement of the rectovaginal fascia together with reconstruction of the pelvic floor and perineum completes the operation with accurate restoration of normal anatomical relationships having been achieved.

Like the several operative plans discussed above, this composite one also has its limitations. Obviously it is inapplicable to the treatment of recurrent herniae following total vaginal hysterectomy. Furthermore, it is an unnecessarily radical procedure for those less advanced grades of genital prolapse which can be adequately handled by the Manchester type of reconstruction. But whenever the genital prolapse is of such grade as to require for its correction the more radical modifications of the Watkins operation or total vaginal hysterectomy I greatly prefer this composite plan, because I think it is sounder in principle and my experience with it thus far convinces me that it can be relied upon to obtain uniformly better and more permanent end results.

References

Farrar, Lilian K. P. *Surg., Gynec. & Obst.* 1938, 66, 44.

Ward, George Gray *Jour. Obst. & Gynaec. of the British Empire.* 1936, 43, 667.

Richardson, Edward H. *Tr. Am. Gyn. Soc.*, 1936.

Idem—*Amer. J. Obst. & Gynec.* 1937, 34, 814.

Oxygen

(Proceedings Staff Meeting Mayo Clinic)

In the manufacture of oxygen by rectification and fractional distillation of liquid air, certain valuable by-products are obtained. Of particular interest are the rare gases which are now used so widely for lighting effects. By re-processing neon, krypton, argon, zeon and helium are obtained in remarkably pure condition. It is these gases which give the different colors to the luminous tube lights.

Liquid oxygen has a temperature of -318.06°F., the lowest easily obtained industrial temperature; whereas, combined with acetylene gaseous oxygen it gives a temperature of 6.000°F., which is the highest available flame temperature. Liquid oxygen is not something to be generally used, but if properly safeguarded is a convenient way of shipping oxygen for very large users, as each cubic foot of liquid expands into 866 cubic feet of gaseous oxygen.

The intense cold of liquid oxygen is used industrially in making shrink fits on machinery parts.

The shipping containers for O gas are necessarily heavy, the shipping pressure is 2,000 pounds per square inch. It is far from desirable that you should obtain the impression that gases under high pressure may be handled carelessly. If you ever use oxygen, the manufacturer will supply detailed advice concerning safety.

Angiomata of Striated Muscle

With Case Report

Robert Harrison Owen, B.S., M.D., Canton, North Carolina
Surgeon Haywood County Hospital

ANGIOMATA of the muscle have a number of theories advanced regarding their origin. A review of the literature on the subject discloses two as having most popularity: a congenital anlage which after trauma begins to proliferate and develop into a tumor (Ribbert[1]), or existing vessels dilating and proliferating, and after a time some of the walls become atrophic, disappear, and allow the sinuses to develop (Virchow).

Primary angiomas of the muscle[2] develop from the vascular plexus of a voluntary muscle, or in the perimysium between the muscle fibers. They may be either simple or cavernous in type. Although veins are found more rarely than arteries, they are not entirely absent. The arrangement of the vessels is extremely variable.

Jenkins and Delaney[3], reviewing benign angiomatous tumors of skeletal musle in 1932 tabulated 256 cases. No two cases occurred in the same family and no hereditary influence was apparent. Only one case has been reported in a Negro[4], six cases in Japanese (Nathgomi).

The growth is rarely larger than an orange and the increase in size is very slow, sometimes extending over a period of 15 to 20 years. The surface of the tumors is lobulated. The size is variable, the consistency usually doughy to the touch and sometimes pulsating.

Davis and Kitlowski[4] reported 11 cases from Johns Hopkins Hospital, one of these being the only Negro case ever reported. The masseter muscle was involved twice. The treatment that gives the best and most permanent results is complete excision of the tumor mass. In some cases radium or deep x-ray therapy shrinks the large mass to such a degree that complete surgical excision is possible without impairment of muscle function. Amputation has been done on an extremity.

Auvray[5] reports a case of a tumor involving the entire right cheek in which radium was used successfully. Treatment began at 22 months and examination at the age of 22 years verified the good results obtained.

Case Report: A white matron, aged 24, entered the Haywood County Hospital, October 8th, 1936, on my surgical service, wth an expansile, pulsating, painful tumor the size of a lemon on the right side of the face. (Fig. 1)

She was the second child of eight and no abnormality was apparent at birth. Labor was normal. No similar condition or abnormality could be found in the family history on either side. She was told she had fits at the age of six, sometimes as many as 10 in one day, the tendency lasting until she was 13 years old. No injury to the tongue occurred.

It was not until she was seven years old that her mother noticed a small lump under the skin at the right angle of the mandible, which she thought was a result of a fall during one of the convulsive seizures. This lump was painless and increased in size until she was 14 years old. At this age she began to menstruate and for the first time pain was felt in the tumor. At each succeeding period the tumor became painful. Tumor growth was more rapid after the onset of menstruation.

Five and one-half years ago she was operated upon in a hospital in another State. The tumor was not removed. Because of the bleeding the wound was packed and x-ray therapy was used; hence the scar in Figure 3.

The patient was fairly well developed, general physical examination negative except for an ovoid tumor on the right side of the face as shown in Figures 1, 2 and 3, with palpable pulsation, and a distinct systolic bruit audible over the mass. The tumor measured 11 cm. transversely (horizontal to body of mandible) and 8 cm. in the vertical direction. There was no superficial dilation of veins. An irregular scar 6 cm. long and 1½ cm. broad extended obliquely across the mass as seen in Figure 3.

When firm pressure was applied over the external maxillary artery the tumor decreased in size and the bruit disappeared, as the patient noted readily.

Transillumination was negative. Radiological examination revealed no phleboliths or anything of importance. Heart and lungs were normal; blood Wessermann and urine negative.

The patient was anesthetized with ether by Dr. Tom Stringfield, while I was assisted by my wife, Dr. Margaret L. Owen. To prevent excessive hemorrhage a one-inch horizontal incision was made below the body of the mandible (Fig. 6.), and the external maxillary artery and vein ligated. This immediately stopped the palpable pulsation. By sterile technique Dr. Stringfield listening over the tumor with a stethoscope found that the bruit had ceased. This wound was then closed with horsehair interrupted sutures (Fig. 6). The old irregular scar shown in Figure 3 was excised and the tumor removed in two masses, avoiding injury to the facial nerve and Stenson's duct. The parotid gland was exposed and branches of the facial nerve were seen. The tumor was vascular and great quantities of fibrous tissue were encountered throughout the procedure. The wound was closed without drainage by horsehair interrupted sutures. The patient remained in the hospital 8 days and had an uneventful recovery.

The pathological report of the tissue removed is by Dr. Roger Baker of Duke University Pathological Laboratory:

Gross Examination.—The specimen consists of two masses of tissue weighing approximately 20 grams. One mass measures 4 x 2.5 x 2 cm., the other 3.5 x 2 x 2 cm. These masses of tissue do not appear to be encapsulated and their external free surfaces are fairly irregular in outline and present a light brown appearance of striated muscle for the most part, with several areas of greyish-yellow and greyish-white scar tissue over the surface.

There are some large veins over one surface of the larger mass of tissue. The tissue is moderately soft and spongy in consistency. Cut section shows a fairly uniform pale brown surface simulating in appearance bundles of striated muscle separated by the characteristic delicate white streaks of connective tissue stroma. Fat is scattered throughout in small deposits in this interlacing supporting network and at the periphery. There are several small areas particularly evident in the smaller tissue mass where the tissue presents a darker brown color and assumes a somewhat translucent appearance. These areas are streaked with yellow and are somewhat firmer in consistency than the remaining tissue.

Microscopic Study.—Numerous sections through this tissue show it to consist of striated muscle, scar tissue and a fine network of capillaries filled with blood. The network of capillaries appear quite diffuse and in many places seem to infiltrate the muscle fibers. Some of the lining cells appear large and swollen and in places the lumina are very small. In some areas these cells which appear to line the capillaries are arranged in whorls. This is especially true around blood vessels. Some of these sections show large areas of scar tissue and in these places hyaline changes are often evident.

At the present time, 33 months after the operation, the patient is free from pain and public em-

Figures 1, 2 and 3 are views taken pre-operatively. Figures 4, 5 and 6 are similar views but taken several months post-operatively.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

barrassment with no return of symptoms or tumor.

Bibliography

1. Riebert: *Arch. F. Path. Anat.* 151:384, 1898.
2. Matas: The Cyclopedia of Medicine:Vol. XII 1936. *F. A. Davis Co.* Phila.
3. Jenkins, H. P., and Delaney, P. A.: Benign Angiomatous Tumors of Skeletal Muscles. *S. G. & O.*, 55: 464-480. Oct. 32.
4. Davis, J. S., and Kitlowski, E. A.: *Arch. Surg.* 20: 39. Jan. 1930.
5. Auvray, *A.* Guerison: D'un enorme lymphangiome de la fore par la radium therapie, *Bulls et Mem. Sec. Na. De Chir.*, 60:611-615, May 5, 1934.

Other References

Davis, J. S.: Primary Hemangiomata of Muscle. *Bull. Johns Hopkins Hosp.* 19:74. March 1908.

Davis, J. S. and Wilgis, H. E.: Treatment of Hemangiomata by Excision, *South. M. J.*, 27:283-290. April 1934.

Gaudier, E.: Regarding a Case of Muscle Angioma, *Echo Med. du Nord*, 37: 141. March 25, 1933.

Thomas, H. B.: Angiomas of the Skeletal Muscle *Am. Jour. Surg.*, 31:354 1936.

Thomas, H. B. and Hark, I. W.: Angiomata of Skeletal Muscle. *Am. Jour. Surg.* 36:69, 1937.

Zappala, G.: Benign Angiomatous Tumors of the Muscles of the Skeleton, *Polyclinico, (Sez. Chir.)*, 42:367 June 1935.

The Diagnosis, Treatment and Prevention of Vitamin B_1 Deficiency

(Norman Jolliffe, New York City, in *Bul. N. Y. Academ. of Med.*, July)

The diagnosis depends mainly upon the history and the signs and symptoms. The clinical syndrome may be so typical that a positive diagnosis can be made; or so vague that it is impossible to diagnose.

Most definite are anorexia, fatigue and a neurological and a circulatory syndrome. These symptoms without supporting objective signs not responding to thiamin therapy within 72 hours, are probably not due to vitamin B_1 deficiency alone.

The neurological manifestations are those of bilateral, symmetrical polyneuritits involving first and predominantly the lower extremities. For other neuritides other etiologic agents should be sought.

Heaviness of the lower extremities and calf muscle cramps are usually the first symptoms, followed by paresthesias in the toes and finger, burning of the feet and pain in the legs. Calf muscle tenderness and plantar hyperesthesia are as a rule the earliest objective signs. The hyperesthesia may extend up the legs in a sock distribution. Vibratory sensation may be lost in the toes. When, in addition, the ankle jerks are absent, a diagnosis of mild polyneuritis may be made. Motor changes advance, the knee jerks disappear, position sense in the toes becomes impaired, calf muscle atrophy develops and foot drop follows. We classify this degree of involvement as moderate, provided the signs are confined to the lower extremities. When there is also involvement of the upper extremities, the spinal cord or the cranial nerves, or when a "central neuritis" is present, we classify the polyneuritis as severe.

The circulatory manifestations, edema and serous effusions in the absence of recognized etiologic factors, sudden circulatory collapse or other circulatory manifestations in about one-third, more likely to occur in subjects with suggestive or mild involvement than in those having advanced neuritis. This factor is related to the ability of subjects with mild neuritis to perform muscular exertion.

Should be suspected in low income groups, persons who have erroneous dietary habits and food idiosyncrasies, and the alcohol addict.

Treatment—Rest, diet, vitamin B_1 and correction of the factors responsible for the deficiency. After a few days of thiamin therapy the patient is made ambulatory as soon as possible, in order to prevent shortened muscles and to obviate much physiotherapy.

Eliminate all vitamin-free or vitamin-poor foods such as white bread or crackers, pastries, alcohol, corn syrup, candy, corn starch, polished rice and soft drinks. For patients who are extremely ill the diet must be largely milk, cream, ground liver, pureed legumes, whole grain cereals and fruit juices, administered if necessary through the nasal catheter in hourly feedings. Following improvement, or in less severely ill patients, whole wheat bread or crackers, other vegetables and raw and cooked fruits are added; and a wider variety of meats permitted provided that 250 grams of either liver or pork muscle are included in one of the meals daily.

Supplement the diet by daily doses of 50,000 int. units of vitamin A, 400 to 500 mg. of cevitamic acid, and a rich source of the entire vitamin B complex. To insure the adequacy of the entire vitamin B complex, we routinely administer one of the following: 20 grams of vegex, 60 grams of brewer's yeast, or 30 grams of aqueous liver extract. Vitamin concentrates, especially those in pill or capsule form, are possibly lacking in one or more of the fractions of the vitamin B complex.

Administer thiamin chloride parenterally, erring on the side of wasting the vitamin rather than giving a suboptimal amount. In circulatory collapse first dose may consist of 100 mg. intravenously and 300 mg. intramuscularly, with subsequent 200 mg. intramuscularly every 3 to 6 hours; the second 24-hour amounts recommended for the less severely ill patients 50 to 200 mg. of thiamin chloride daily, preferably given in two doses, intramuscularly, reduced to 10 mg. daily till convalescence is well established.

The underlying cause responsible for the deficiency must be found and if possible eradicated. It may be an inadequate diet, an underlying alcoholism, or some disease preventing the absorption or utilization of the vitamin.

Prevention may be accomplished in at least three ways for the general population. 1st, best—whole wheat bread and whole grain cereals plus a reduction in sugar and alcohol. 2nd—addition to diet 0.5 mg. of thiamin chloride for each 1000 calories. The cost of this thiamin to the manufacturers would probably not be in excess of one-quarter cent per 1000 calories. 3rd—each individual on insufficient diet to take daily 2 mg. of thiamin chloride, or preferably, a preparation of the entire vitamin B complex containing the same amount. (Impracticable for a large portion of our population because of expense.) The first two suggestions could be carried out with little added cost to the consumer.

Picrotoxin as Antidote for Barbiturate Poisoning

(J. T. Stephens & J. P. Anderson, in *Ohio State Med Jl.*, April.)

A young woman, 20 years, 45 min. after ingesting 72 grains of sodium amytal, was brought to the hospital comatose in anoxemia, cyanosis, reduced respiration and clonic convulsions. Intravenous injection of 156 mg. of picrotoxin over 24 hours, beginning 12 hours after admission, plus supportive and symptomatic treatment including much intravenous fluid, restored the patient to consciousness and produced a rapid recovery. Within a few days, the woman was entirely well.

Chronic Meningococcus Septicemia

Successful Treatment of One Case With Sulfanilamide

Erle B. Craven, Jr., M.D., Lexington, North Carolina

SINCE its first description by Salomon[1] in 1902, there have been numerous reports of chronic meningococcus septicemia unaccompanied by meningitis, such as the excellent reviews of Carbonell and Campbell[2] and of Appelbaum[3]. Since the advent of sulfanilamide the reports of the efficacy of this drug in the treatment of meningococcus meningitis have been very encouraging. Apparently, the first case of meningococcus septicemia without meningitis to be treated with sulfanilamide was reported by Schwentker, Gelman and Long[4]. This case was included in the report of a series of cases of cerebrospinal meningitis and few details were given. In 1937, Zendel and Greenburg[5] described the effect of sulfanilamide and prontosil on 2 cases of chronic meningococcus septicemia, one of which, however, was complicated by meningitis. Their results were excellent, the temperature falling to normal and clinical improvement beginning between the second and third day. Dimson[6], in 1938, reported one case in which clinical improvement was evident after the first dose of 2-(paminobenzenesulfonamide), Pyridine (M & B 693), and there were no further signs of the disease after the sixth day of treatment.

Because of the small number of cases thus far reported and because of the long duration of the illness before treatment was begun, the present case is offered as an additional illustration of the remarkable and rapid effectiveness of sulfanilamide on the course of chronic meningococcus septicemia.

Report of Case

A white man, aged 39 years, seen in consultation with Dr. J W. Griffis of Denton, N. C., on June 18th, 1938, complained of severe generalized arthralgia, chills and fever, and a spotty skin rash of 10 days duration.

The only factor in the past or family history considered of probable importance was the unexplained acute illness of the patient's 5-year-old daughter in May of the same year. The child's illness was characterized by high fever, coma, delirium, evident pain, and endured 4 weeks. No diagnosis was made, and the illness terminated spontaneously with only symptomatic treatment.

The patient's present illness began on June 8th, with a chill and fever and severe generalized aching, predominantly in the joints but also felt in the back and throughout the long bones. The next day he noticed a pink spotted rash, most prominent on the arms and legs but occurring also on the abdomen, chest and back. Daily fever continued, and chills occurred every day or every other day in no regular order. On the days of high fever and chills, the patient invariably felt worse, and he would note new crops of pink and reddish spots.

June 18th, the patient was febrile, mildly delirious and moderately cachectic, temperature 103° F., pulse rate 120, b. p. 122/78, respiratory rate 22. The skin was dry and hot; and distributed thickly and irregularly over the arms, legs, abdomen, chest, neck and face were pink to faintly red irregular macules, from 2 to 8 mm. in diameter. A few spots of brownish pigmentation probably represented old and fading lesions. No hemorrhagic or purpuric spots were seen at any time during the illness. The pupils and optic discs were normal. No abnormalities were found in the lungs. The heart was moderately overactive, a strong apical thrust being visible and papable in the fifth interspace in the left midclavicular line. The retromanubrial dulness measured 5 cm. in the second interspace. The cardiac dulness extended 10 cm. to the left and 3 cm. to the right in the fifth interspace. The first sound at the apex was followed by a moderately loud murmur of medium harshness, transmitted as far as the axilla. The second sound was clear and high-pitched. No diastolic murmurs were heard at apex or base. There were no thrills. The neurological examination showed no abnormalities: tests of the cranial nerves elicited normal responses. The sensory and motor systems were unaffected. Deep and superficial reflexes were equal and normally active. The neck was easily flexed without pain, and Kernig's and Brudzinski's signs were negative.

Examination of the blood showed red cells 4,100,000, hemoglobin 12.5 grams (Sahli), white cells 17,500, with 88% polymorphonuclears. The red cell sedimentation rate (Wintrobe), corrected, was 55 mm. in 30 minutes. The blood Wassermann was negative. Agglutinations for typhoid, paratyphoid A and B, and for brucellosis were negative. The serum agglutinated *B. proteus* X 19 antigen in a dilution of 1 to 1280. A voided specimen of urine showed no abnormalities. The cerebrospinal fluid was normal.

A provisional diagnosis of Rocky Mountain spotted fever was made, and blood was taken for culture. The cultures were negative after 15 days. On June 25th, specimens of serum were sent to another laboratory, using the same strain of proteus antigen as my own, and also to the State Laboratory of Hygiene. The former reported agglutination of proteus X 19 in a dilution of 1 to 2560, while the report from the State Laboratory, using a different strain, was negative. Again, on July 7th, the antigen previously showing positive agglutinations was agglutinated with a serum dilution of 1 to 1,500, and the State Laboratory report was again negative. Blood culture on this date was sterile. On July 21st, the white blood count was 17,500, hemoglobin 10.4 grams. Chills and fever continued as before, and new crops of pinkish-red spots appeared every few days. Another blood culture gave negative results. On July 27th, the patient was brought to the hospital, and a blood culture made that day showed a growth after 48 hours of 8 colonies of meningococci per c.c. of blood. Another culture made on July 29th, showed 6 colonies of meningococci per c.c. of blood.

Upon admission to the hospital, the patient was in a chill, with temperature of 103°. Another chill with fever of 104.8° occurred the following day. Sulfanilamide by

mouth in a dosage of 15 grains every six hours was begun on July 30th. Definite improvement was noted after the first 12 hours, and after 24 hours the temperature was normal for the first time in 7 weeks. The sulfanilamide concentration of the blood was maintained between 7 and 10 mgm. per cent during the following week. Except for a moderate rise in temperature on August 2nd, following a blood transfusion, the temperature and white blood cell counts fell steadily toward normal. Careful daily search was made of the skin, but after the first day of sulfanilamide therapy no fresh rose spots were seen. The joint pains and generalized aching ceased after the first day of therapy, and there was a striking gain in appetite and general sense of well being. After the first week of treatment, no signs remained of the preexistent rash, and blood cultures made on August 5th, 12th, 19th and 23rd have remained sterile to date. On August 19th, after 21 days of treatment, the sulfanilamide was discontinued because it was thought that the slight degree of fever persisting might be due to the drug itself. The temperature fell promptly to normal and has remained so since. Upon discharge from the hospital on August 23rd, the patient's weight was 125 pounds, a gain of 10 pounds over his admission weight. The precordium was quiet. The cardiac apex could be felt in the fifth interspace 7 cm. to the left of the midsternal line. The heart sounds were clear, and there were no murmurs. The pulse rate was 70, white blood cells 6,200 and hemoglobin 14 grams. The red blood cell sedimentation rate, corrected, was 8 mm. in one hour. Reëxamination 3 months and 6 months after the illness disclosed no abnormalities.

Summary

1. In a man, aged 39, the diagnosis of chronic meningococcus septicemia without meningitis was established in the seventh week of his illness by two positive blood cultures. Three previous blood cultures had shown no growth.

2. Antecedent to the positive blood cultures, 3 separate specimens of the patient's serum had agglutinated 1 strain of *B. proteus* X 19 in dilutions respectively of 1 to 1280, 1 to 2560 and 1 to 1280. A different strain of *B. proteus* X 19 failed to be agglutinated by the same specimens of serum. The significance of this is not known, but it is interesting to note that Ingalls[7] has reported a positive Weil-Felix reaction in a dilution of 1 to 320 in a splenectomized paretic in whom malaria was induced.

3. The meningococcemia was terminated promptly by the ingestion of sulfanilamide.

References

1. Salomon H.: Meningokokkenseptikämie, *Berl. Klin. Wchnschr.*, 39, 1045, 1902.
2. Carbonell, A. and Campbell, E. P.: Prolonged Meningococcemia: Report of Three Cases, *Arch. Int. Med.*, 61, 646, 1938.
3. Appelbaum, E.: Chronic Meningococcus Septicemia, *Am. J. M. Sc.*, 193, 96, 1937.
4. Schwentker, F. F., Gelman, S., and Long, P. H.: The Treatment of Meningococcic Meningitis with Sulfanilamide, *J. A. M. A.*, 108, 1407, 1937.
5. Zendel, J. F. and Greenberg, D.: Meningococcemia: Treatment with Sulfanilamide and Prontosil, *N. Y. State J. Med.*, 37, 1744, 1937.
6. Dimson, S. B.: Chronic Meningococcal Septicemia Treated With 2-(P-Aminobenzenesulphonamide) Pyridine, *Lancet*, 2, 424, 1938.
7. Ingalls, G. S.: Induced Malaria in a Patient Without a Spleen, *J. A. M. A.*, 111, 700, 1938.

The Open Air Treatment of Chronic Leg Ulcers

(O. S. Jones & F. P. Jones, St. Louis, in *Jl. Mo. Med. Asso.*, July)

Most patients think a sore should be wrapped up, that it will do untold damage by " going in", or they will get "cold" in their ulcer should it be left exposed to the air. Ulcers, which are intensely painful especially when exposed to the air, are mored difficult. There is no known method of relieving this pain.

We doubt there is an ointment that can aid in the healing of chronic leg ulcers. Under the open air treatment for 24 hours a day these same ulcers turn from a gray sloughing crater into a red granulating surface and then into a piled-up area of granulation with ultimate modified epithelization of the entire ulcer. Unless crusts are infected underneath they may be left in place for months. Skin grafts in the final stages are very helpful.

No salves or washes of any kind are used. If the leg swells and becomes reddened from the lack of support of the venous circulation of the leg, elevate the limb upon a chair while the patient is seated in another chair.

At best, it takes from 4 to 6 months for a bad case to heal. Many times no improvement can be seen after two months' treatment. In the most severe of cases, with acute inflammation, rest in bed for as long as a month with sulfanilamide therapy is necessary.

Inject the varicose veins near the ulcer with ½ c.c. of a 5% solution of sodium morrhuate. Give sulfanilamide, 30 or 40 grain daily, if well tolerated. This amount of sulfanilamide can be used for months if well tolerated by the individual. The third adjunct is a vitamin therapy.

Copper in Anemia

(C. P. Segard, Leonia, N. J., in *Amer. Jl. Dig. Dis.*, July)

In all cases, large doses of iron were more effective than small doses. But iron is not the whole answer. Though ¾ or more of the "massive dose" of iron was known to be excreted, yet results in hemoglobin formation were better.

Absorption by milk from copper equipment has frequently been the source of copper for test animals, supposedly on a copper-free diet. Just as copper has to a great extent departed from our kitchen, so it has for some years been on the way out in our milk, both fresh and evaporated.

Copper is present in certain vegetables, fruits and animal foods, but here the source is as variable as the soil.

If 14.5 gm. or 15.4 gm. of hemoglobin per 100 c.c. of blood is normal, then whatever food or therapy (or both) is necessary to bring it to that level should be used.

Copper does not show toxic effects in the test animal until a level of 150 times its therapeutic dose is reached.

The only trace elements stored in the liver or the fetus are copper and iron and this storage reaches its peak at birth.

A few points need to be emphasized in copper-iron therapy. On an empty stomach there is nausea and sometimes emesis. Given with food three times daily in recommended dosage there is a rapid rise in hemoglobin content. This rapid rise causes an increase in appetite. If this appetite is in any way satisfied, there will frequently occur a corresponding increase in weight.

In nutritional anemia it is important to be certain of the presence of copper.

Acute Intussusception*

W. Edwin Miller, M.D., F.A.C.S., Whiteville, North Carolina

THE purpose of this paper is to review briefly the literature on intussuception, to stress the importance of early diagnosis and appropriate treatment, and to report a case of recurrent intussusception.

The invagination or telescoping of one segment of the bowel into another which constitutes intussusception is made up of two portions: an invaginated part, the intussusceptum; an invaginating part, the intussuscipiens. This process occurs more often in a downward direction, but, rarely, this direction is reversed. It may occur in any portion of the bowel.

Intussusception is classified roughly by most writers as ileal, ileocolic and colic. The majority are of the ileocolic type. Because most cases are seen in children—75% in those less than one year old—one writer calls intussusception a pediatric disease. Two out of three cases occur in males.

No definite cause has been ascribed in every case. Some of the theories set forth are:

1. Excessive motility of the cecum and ascending colon.
2. Narrowing of the bowel at the site of intussusception—about 80% occurring at the ileocecal valve.
3. Irritability of the bowel where there is increased peristalsis as in enteritis. Strong laxatives have been mentioned as a factor.
4. Relaxed bowel mesentery especially of the ileum.
5. Hypertrophied Peyer's patches and intestinal polyps.
6. A diseased appendix may be a factor.
7. Indiscretion in diet.

It has been brought to light that more cases of intussusception are seen in Australia and in Boston, Mass., than in any other locality.

The morbid anatomy varies with the extent and duration of the intussusception. At first there is edema due to interference with the blood supply. As the intussusception progresses the blood supply to some parts of the bowel may be entirely blocked. The obstruction produces the changes of any type of acute intestinal obstruction. If reduction is not accomplished in from 24 to 36 hours, necrosis and gangrene soon occur. A few cases of spontaneous recovery from sloughing out of the necrosed bowel have been reported, but this chance is too remote to be relied on.

About 80% of the cases present rather typical symptoms. The onset is usually sudden, often in a healthy child. The child cries out with pain. During the first paroxysms the face is flushed; later it becomes pale and drawn. The temperature is normal or subnormal, the pulse rapid. With the dehydration from vomiting comes fever. At times the condition follows a diarrhea. The child frequently lies on its side with knees flexed, or it may crawl about on its hands and knees crying out with pain. Finney considers the latter almost a diagnostic sign. The degree of shock advances with the duration of the intussusception. Little if any abdominal distention is seen early in the course; the abdomen may be flat and relaxed. A mass in the abdomen is visible at times. This mass is oval or sausage-shaped and of a doughy consistency. It is found most often along the course of the large bowel but may be under the border of the liver and be missed. Visible peristalsis may be observed above the point of obstruction. In the beginning there may be one or two normal bowel movements; the subsequent stools consist mostly of blood and mucus and their passage is accompanied by tenesmus. The blood may not pass in the stool but be found on the finger after rectal examination. One writer reports that 10% of the cases show no blood in stools. The intestinal bleeding usually occurs 9 to 12 hours after onset. The examining finger may palpate a mass in the rectum; on occasions the intussusceptum appears outside and is sometimes mistaken for a prolapse of the rectum.

In arriving at a diagnosis a complete history, obtained from the mother, is most helpful. Physical examination usually reveals a movable abdominal tumor, a more or less relaxed abdomen, a palpable rectal tumor, blood and vomiting. There is no fever at first. The blood and urine examinations are usually essentially negative. Intestinal obstruction may be determined by barium enemata.

One must differentiate between appendicitis, a bleeding Meckel's diverticulum, enteritis and prolapsed rectum. In appendicitis there is usually leukocytosis, fever, muscle spasm, and more tenderness over the appendix. There is no palpable mass at first. X-ray study after barium enema is

*Presented to the New Hanover County (N. C.) Medical Society, Wilmington, on March 9th.

helpful in the more obscure cases. In prolapse of the rectum the finger cannot be passed by the presenting part up into the pelvis as it can in a case of intussusception.

There are two schools of thought regarding the treatment of intussusception: The non-operative with surgery if this fails, or surgery from the beginning. Hepsley of Australia reports 142 cases and presents evidence in favor of preliminary injections per rectum using normal saline solution and at times barium enemata. He believes that 60% of all cases of intussusception can be reduced by employing the following techinque: Give the patient a general anesthetic; insert a No. 16 catheter in the rectum; hold irrigating can 3½ feet above the patient; pinch buttocks over catheter to prevent backflow of saline; hold pressure for three minutes; allow the fluid to escape into a bed-pan. Repeat this procedure several times. Hepsley advises against palpating the abdomen while the hydrostatic pressure is on because of the danger of rupturing the weakened intestinal wall.

The difficulty here is to be sure there is a complete reduction. The most reliable sign of reduction is abdominal distention which occurs when the fluid escapes into the small intestine past the point of obstruction. The abdominal tumor disappears. In intussusception involving the large bowel barium enema and x-ray may serve. If the reduction is complete, yellow fecal matter usually returns in the rectal irrigations and flatus is present. Hepsley continues with surgery if he is not sure the reduction is complete. The non-operative technique is never employed after the first 12 hours.

The majority of men in this country contend that surgery from the beginning is the treatment of choice. Several operative procedures have been employed. In the early cases the intussusception can usually be reduced by milking the intussusceptum out of the intussuscipiens. If one will apply meticulous care in manipulating the bowel, applying warm salt compresses to reduce the edema, reduction can be accomplished in most cases. Brown incises the serosa over the most constricted part and repairs the defect after reduction. There are operations to prevent recurrence, such as stitching the ileum to the wall of the cecum and the cecum to the lateral abdominal wall. The consensus of opinion is that the reduction of the intussusception relieving the obstruction is as much as one should attempt in the very sick patients where physiological functions are so unstable. It is only in the early hours of the acute condition that any course of treatment can offer much hope.

It is in the group of cases neglected over 36 hours and in those rapidly progressing and reduction impossible or the bowel gangrenous, that more difficult and less promising surgical procedures must be employed. One of the following operations may be helpful: however, all carry a high mortality rate: Resection with anastomosis, resection with double enterostomy (Mikulicz); anastomosis around the mass and resection of the intussusceptum at a second operation, and ileostomy with resection at a second operation. Woodhall describes a modified double enterostomy (Mikulicz) in which he resects the involved bowel, makes a lateral anastomosis 8 cm. from the severed ends, brings these two ends outside and leaves them with clamps applied; thereby, accomplishing what has been termed a double-barrel enterostomy useful in case the distention increases. Later he closes the ends of the bowel and buries them under the skin. Two cases were reported with no deaths following the operation.

Dr. Charles Mayo has stated that these acutely ill patients tolerate multiple small operations better than one large operation.

We can hardly stress too greatly the importance of preöperative and postoperative care. This is especially true in cases in which dehydration is a factor, in which cases 10% glucose in normal saline should be given by vein before and after operation, and normal saline subcutaneously. A blood transfusion may be given if indicated. All measures should be employed to combat shock.

Report of a Case of Recurrent Intussusception

Colored girl baby, 7 months, admitted to the Columbus County Hospital on the morning of Nov. 27th, 1938, because of vomiting and bloody stools The mother stated that baby was taken sick on the afternoon of the previous day crying out with pain. No nourishment retained since onset. Baby has had diarrhea for a week, six stools passed on morning of admission contained mucus and blood. No history of any previous similar trouble.

A well developed and fairly well nourished colored baby in some discomfort, skin dry, temperature subnormal, tongue heavily coated, abdomen flat and fairly soft, slight muscle spasm. A mass could be seeen and felt just below and to the left of the umbilicus; it could be moved about slightly.

A diagnosis of intussusception was made and immediate operation decided upon. A left rectus incision was made at site of mass. Five or six cm. of ileum had become invaginated through the ileocecal valve. The walls of the cecum were edematous and injected, the appendix was slightly distended with injection of the superficial vessels. There was beginning invagination of the lateral wall of the cecum. Reduction was fairly easy. As the appendix was somewhat involved it was removed and the wound closed.

The patient reacted well and took fluids by mouth soon afterwards. Nausea and vomiting ceased. Baby put back on breast milk day after operation. Normal saline given subcutaneously to overcome dehydration. Codeine sulphate, gr. ¼, given for pain.

Day following operation patient had two stools with small amount of blood. After operation the temperature rose to 101° but returned to normal on the third day. Stools continued normal until the fourth day when the

temperature rose to 103° and baby refused nourishment. Abdomen became distended. Vomiting began and patient showed symptoms of acute intestinal obstruction. Enemata were given with no results. Ringer's solution was given subcutaneously. A mid-right-rectus incision was made and site of previous intussusception inspected. This bowel appeared normal but somewhat collapsed. Loops of small intestine were markedly distended. Examining finger found a mass in right upper quadrant which turned out to be an intussusception of 8 cm. of the small intestine, fairly easy of reduction. Because of the marked distention an ileostomy was done proximal to the point of obstruction, and the abdominal wound closed. Immediately following operation 10% glucose was given in normal saline intravenously. A Levine tube was inserted through the nose into the stomach for decompression. At first there was only a little drainage from the ileostomy tube. On day following second operation a transfusion of 150 c.c. of citrated blood was given. On this day patient had a normal stool. Ileostomy tube allowed considerable drainage and the abdominal distention was greatly relieved. On the third day patient began taking fluids by mouth. Temperature began to drop and was normal on the 12th day following admission to the hospital. The Levine tube was left in the stomach four days apparently giving considerable relief. Baby was put on formula of evaporated milk. Ileostomy tube was gradually clamped off and removed on the eighth day after the second operation. Discharged 17 days after first operation. The baby was seen recently in good condition.

Conclusion

Early diagnosis with the immediate institution of treatment is essential to reduction of the mortality rate in intussusception. The possibility of avoiding operation in certain selected, promptly diagnosed cases may be considered in the treatment. Good surgical technique with attention to detail in the preöperative and postoperative care will contribute greatly toward lowering the high mortality rate.

Instructive Case of Ascariasis

(Anthony Bassler, New York, in *Amer. Jl. Dig. Dis.*, July)

A nurse, single, 40, seen in November, 1935. Her appendix had been removed while in training, in 1919 a ventral suspension, in 1925 a cholecystectomy for stones. She worked fairly steadily as a hospital nurse for 15 years. In 1931 injured in the left breast by an ice box door and a hematoma formed. The breast vessels were ligated to control the increasing size of the mass. A year later she was seized with a severe pain in the same breast. Shortly after this she had distention and pressure in the upper abdomen and even water caused her to vomit. In 1932 she was operated on for "adhesions." Following this she rapidly lost weight (30 lbs.), vomited persistently, became unable to work, and complained of "a feeling as if there were mice in the stomach." X-ray examination disclosed food remaining in stomach "over 17 hours."

A gastroenterostomy was done in June, 1933. Three days after phlebitis in the right lower extremity and then in the left. She continued to vomit and do badly. Gastric stagnation was not much lessened. Ten weeks after operation she started vomiting round worms, 2 to 8 each time. She stated that in the course of 10 days, she vomited over 200 worms and passed an occasional one by rectum.

In 1933 a diagnosis of probable pregnancy was made because of sudden cessation of menstruation and a serous discharge from both nipples. Because of a "terrific" pain in the left arm and breast she was examined by Dr. Hunner of Baltimore, and two strictures of the left ureter were diagnosed. For this the right kidney was removed. Shortly after she complained of pain and noticed lumps in both breasts (notably the left) with discharge from both nipples, and both breasts were removed. The pathtime of the removal of the kidney and breasts, several x-ray examination of the stomach were made, one in July, 1934 "showed evidence of worms in the pylorus" with gastric stagnation. She continued to vomit an occasional worm and in October, 1935, had much difficulty getting her bowels to move. Ova were found in 17 of 31 stools.

When seen by me she weighed 76 pounds, having lost practically 50 pounds since the beginning of her illness. She stated that she was losing 3 out of 4 meals. In the evening she would vomit all the meals of the day at one time. Santonin had been taken more or less steadily for several years. She stated that the last worm she had vomited had come up a month previously and as a result of several negative stool examinations for ova and x-ray films of the stomach no more were thought to be present. Altogether she thought that she hd vomited over 500 round worms, and passed about 50 by rectum.

Stomach was achylic. The stools contained an occasional ovum of ascaris. She presented films which showed a moderate-size round worm coiled up in the duodenum.

On a bland low-residue diet with vitamins and minerals, rectal instillations of 25% glucose solutions, rest and hypodermic injections of calcium and iron glycerophosphates she gained 15 pounds and was considerably improved. Two films showed the worm still in the duodenum. Several attempts were made to remove the worm, it of course not being known whether there were others present. Naphthalin in 0.05 gm. doses, 4 times a day oil of chenopodium in 5 mi im doses, both preceded by purgation was tried. These treatments were fatiguing and could be persisted in for only a few days. A film showed the worm still in the duodenum.

February 10th, 1936, following an evening meal of soft foods, 5 crystoids (1 gm.) of hexylresorcinol (Sharp and Dohme) was given the next morning on an empty stomach in one dose with a glass of water, a saline purge given the next morning. On the 3rd day she passed a single adult female worm and two subsequent x-ray examination proved that the worm had disappeared from the duodenum. After this stools examined for ova twice a week for 6 weeks were all negative for ova and they have remained so for nearly two years. In the meantime the patient recovered her health and strength, weighing 120 pounds on January 3rd, 1939, and is working steadily and hard as a district nurse.

How Often is the Diagnosis of an Abdominal Neurosis Correct?

(W. C. Alvarez, Rochester, Minn., in *Amer. Jl. Dig. Dis.*, July)

Wilbur and Mil's reviewed the records of 354 patients who returned to The Mayo Clinic for a check-over some years after they had been told there that they were suffering from a functional disorder. The minimal interval was more than 5 years, the average 7 years. The results of the study indicated that the original diagnosis was correct in 85% of the cases.

One conclusion drawn was that the diagnosis of an ulcer-like functional syndrome should now be made with reluctance. Probably, now that the gastroscopist has come forward to help us, we gastroenterologists will not so often fail to recognize the presence of the shallow type of gastric ulcer which the roentgenologist can hardly hope to see.

Strangulated Hernia in Old People*

Paul McBee, M. D., Bakersville, North Carolina

MANY of our most valuable citizens are old. Many of them have become valuable through a great number of years of experience in vocations which cannot be learned in a short time. Not a few have such delightful personalities that we are reluctant to part with them. People who have only a few years to live do not want to be deprived of those, and strangulated hernia causes a great many deaths among old people. This mortality is much too high and there is much that we can do about it.

Intestinal obstruction, which is the leading consideration in strangulated hernia, carries a high mortality at any age. It is many times more serious when complicated by the degenerative changes which are present to some extent in all old people. Sometimes it is necessary to forego involved operations which we would ordinarily perform upon younger people, and resort to some simpler procedure. A man 70 years old will hardly be able to load pig iron anyway, so if we just save his life and give him a reasonably good local result, we should be satisfied, and we may rest assured that he will be.

Hernia is so prevalent that lay people do not regard it seriously. This view, I am sorry to say, is shared to some extent by a great many physicians. Economic considerations, fear of surgery, ignorance and the use of trusses cause a great number of peope to carry their hernias over until old age. A considerable number of hernias first become evident after middle age is past. With so great a number of old people carrying blind pockets around in the bottoms of their bellies it is natural that loops of bowel should be forced into, and be caught in, a considerable number of them.

Very few lay people are willing to attempt the setting of fractures nowadays, but nearly every farmer, blacksmith, lumberjack, plumber and mill hand feels perfectly competent to reduce a strangulated hernia. The trauma to innocent bowel is terrific! Unfortunately, not all injury is inflicted by ignorant people. Some of the over-zealous attempts at reduction by otherwise competent doctors result in even greater damage. Patients are sometimes given anesthetics and very strenuous attempts made at reduction. As a rule, I would say that any hernia which cannot be reduced by gentle manipulation after a hypodermic injection of morphine or which is seen later than one hour after the bowel has become incarcerated is a surgical condition. We know that we can leave a tourniquet on a limb for about an hour with safety. The intestine is of course, much less able to withstand pressure than the leg, and old intestine is more liable to injury than young, but the circulation will return to most loops which have not been constricted more than an hour. Considerable judgment is sometimes required to decide about whether it is wise to make a reduction even though it is possible. A patient who dies from having a badly damaged loop of bowel returned to his abdomen by closed reduction is just as dead as though he had died from any other ill-advised operation. Peritonitis is much more frequently fatal in old people.

Local or spinal anesthesia, preferably local, should be used for nearly all strangulated hernias in old people. The hernia sac should be opened through an ample incision and the internal ring spread sufficiently to free the bowel. If necessary, some of the muscle fibers at the neck of the sac should be cut across. In femoral hernias Poupart's ligament should usually be divided. I frequently employ a muscle-splitting incision of the LaRoque type so that I am able to manipulate both the intra- and the extraäbdominal portions of the bowel, but that is just a matter of personal preferance. The bowel should be liberated at once. Gut which is unquestionalby viable should be returned to the abdomen as soon as this fact is definitely ascertained and the hernia dealt with by whatever method seems advisable in view of the patient's condition. Bowel of questionable viability should be resected promptly, because valuable time may be lost in waiting and this will increase the shock. It has been my experience that old people tolerate properly performed bowel resections well. A good end-to-end anastomosis of the small bowel can be performed very rapidly by a competent surgeon. The technic is a matter to be decided in view of the circumstances. A wide open anastomosis with a continuous through-and-through suture of linen or silk and a continuous infolding peritoneal suture of chromic catgut will give adequate security. If the fecal stream is halted temporarily by small rubber bands, as rec-

*Presented by title to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

ommended by Dr. J. Shelton Horsley, there will be almost no soiling of the peritoneum. The security of such a union is worth all it costs even if there is some compromise with absolute asepsis. I have used the cautery and pile clamps, as suggested by Dr. Addison Brenizer, for several years when severing the bowel. A very thin, bloodless edge is left on the bowel and suturing is easy. With bowel continuity restored and the bowel returned to the abdomen, the simplest way to deal with the hernia is to place a few interrupted sutures of chromic catgut in the hernia ring to produce a quick sealing-off of the peritoneum. Then the hernia sac and remainder of the wound is packed wide open with vaseline gauze. A plain gauze dressing is placed over this and the patient is sent back to bed. These wounds heal by granulation with minimal infection and the hernias are nearly all cured. I have had hardly any recurrences following this simple operation during the past six years. By this means old people are spared unnecessarily long operations with added shock and added mortality.

These patients should receive glucose by vein, in whatever amounts the circulation can tolerate—before, during and after operation. They should have codeine or some other mild opiate in dose sufficient for comfort. Morphine as a rule is not well tolerated by the aged. If it is given, the patient should be watched very carefully. A special nurse with a pleasant personality and experience in the management of old people may tip the balance in favor of recovery.

Psychiatric Versus Psychoanalytical Treatment

(Samuel Kahn, Brooklyn, in *Med. Rec.*, July 19th)

Most of the activities of a psychiatrist, particularly in institutions, revolve around the description of the symptoms, the diagnosis and custodial care. Little benefit therapeutically is derived from such treatment, and the result is that so many patients in institutions remain in institutions, or if they are paroled or discharged, they are either maladjusted or are returned to institutions.

Psychoanalysis aims to establish thorough understanding and sympathy. The patient is taught to have confidence in the analyst, to talk at random, with no censoring and with no resistances. Since he is taught to use undirected thinking, he does not defend himself, his past, his actions nor his thoughts. As he does not direct his thinking, he gradually learns to see how he really thinks. In time, he tells everything about himself which he can recall, and discusses his likes and dislikes, disappointments, victories, ambitions, fantasies—everything which comes into his mind.

He soon learns that certain thoughts, certain behavior, dreams, forgetting, slips of the tongue and pen, certain lies, imaginations, and various symptoms have mental elements in common, underlying principles which govern them all. He learns what his symptoms mean, how to interpret and control them. Then, if successful, he develops a much better character.

The psychoanalyst treats more of the so-called normal people and the neurotic, and seldom psychotic persons. The psychiatrist treats chiefly the psychotic and occasionally the neurotic.

A woman went to a psychiatrist because she had a fear that her 6-year old son would fall out of the window of the 5th floor. She worried that he might catch pneumonia, or be run over by an automobile. The slightest complaint he made she interpreted as grave illness. She became so obsessed with such ideas, that she could not carry on her usual routine. The psychiatrist gave her a physical examination, and did a good deal of laboratory work. She was treated for anemia, had several teeth and her appendix extracted, with no benefit. Then, the psychiatrist argued with her, that the whole situation was rediculous. The patient cried, and tried to control herself, but her obsessions became worse. The psychiatrist finally took her to church to interest her in various religious activities. She tried with a great deal of effort. But, finally, she developed obsessions and fears that she might kill her child, and attempted suicide. Later, she thought she would try to get relief through another doctor, or be committed to an institution.

Though she feared psychoanalysis, she yielded to its treatment as an experiment. She was again examined physically, and some laboratory work was done, but no serious deviations were found. The analysis disclosed that the patient was divorced; she worked and supported herself and her child. She was in love with another man, who would not marry her because of the child. Unconsciously she wanted to get rid of the child. At first, she resented such an explanation, and hated with great gusto both the analyst and psychoanalysis. She slammed the door, and promised never to return. But she did return. She soon understood her conscious as well as her unconscious and made a fine adjustment. The man married her, regardless of the child. She has been getting along well for the last 6 or 8 years.

Psychoanalysis is nothing but a system of reeducation of the unconscious level directly and conscious indirectly. It is a system of deep and thorough understanding. Orthodox psychoanalysis may not be necessary. Modifications often prove very satisfactory.

Gas Gangrene

(J. D. Hancock, Louisville, in *Ky. Med. Jl.*, Jan.)

Gas gangrene is an increasingly frequent disease. Its prevention rests soundly upon excision of devitalized tissue, avoidance of constricting closure or dressings, and administration of prophylactic polyvalent serum combined with tetanus antitoxin. Treatment is through debridement, adequate irrigation with hydrogen peroxide repeated use of the therapeutic serum in large doses, administration of sulfanilamide and x-ray therapy over a 3- or 4-day period, transfusions as indicated, general supportive treatment and nursing care—reserving amputation for uncontrollable extension or hopelessly impaired circulation. While it is difficult to evaluate the merits of each individual procedure there is fortunately no antagonistic action and the patient can be given the supposed benefits of all without anticipating conflicting reactions.

The peroral endoscopist for many years was looked on by most persons as one who specialized only in the removal of foreign bodies from the air and upper food passages, but the most important part of his work is helping to solve diagnostic problems arising from lesions in the tracheobronchial tree, esophagus and stomach.—*Proc. Staff Meeting Mayo Clin.*

Transurethral surgery is in its infancy.—*Alyea.*

An Epidemic of Benign Lymphocytic Meningitis*

Alfred A. Kent, Jr., M. D., Granite Falls, North Carolina

Wallgren[1], in 1925, reviewed the earlier reports of epidemics of a benign disease characterized by headache and meningeal symptoms. He concluded that this disease was a separate clinical entity which he called Acute Aseptic Meningitis. As diagnostic criteria, he established six points: 1) an acute onset of meningeal symptoms; 2) changes in the cerebrospinal fluid characteristic of meningeal irritation, especiallly a moderate increase in lymphocytes; 3) a sterile cerebrospinal fluid both on smear and culture; 4) a short mild course without complications; 5) absence of any condition in the individual that might lead to meningeal irritation; 6) absence from the community of any disease that characteristically invades the central nervous system. Wallgren[1] suggested that the disease might be caused by a virus. In 1929, Viets and Watts[2] of Boston first in this country reported several cases of Benign Aseptic Meningitis. Armstrong and Lillie[3] at the National Institute of Health, in 1934, isolated and described the virus of Benign Lymphocytic Choriomeningitis, Armstrong and Wooley[4], in 1937, further described the virus and its production of protective antibodies in humans and monkeys, and found evidence of a widespread infection by the virus in this country using a serum virus mouse protection test. Abramson[5] reported eight cases in 1934, Toomey[6] 70 cases in 1936, Viets and Warren[7] three cases—with autopsy on one—in 1937, Dominick[8] three cases in 1937, and Dummer, Lyon and Stevens[9] 22 cases occurring in an epidemic in Cincinnati during the summer of 1935. Dummer *et al.* described the symptoms as headache, vomiting, fever and abdominal pain; the physical signs as stiffness of the neck, and positive Kernig and Brudzinski signs; and the laboratory findings as a slight increase in the leukocyte count with a relative polymorphonuclear increase, and a spinal fluid with the pressure slightly increased, the globulin increased from normal, and a cell count from 50 to 200 with the majority of the cells lymphocytes. The spinal fluid was sterile both on culture and smear.

During the months of June and July, 1935, there occurred in this section of the state an epidemic that was called devil's grippe or epidemic pleurodynia by most physicians. At the same time an unusual number of cases of acute anterior poliomyelitis occurred in the same area. From this epidemic I have taken 96 consecutive cases in persons aged from six to 30, as a basis for this paper. Babies and old persons seemed relatively immune, males and females were attacked in equal numbers.

A typical case was of sudden onset with severe headache, vomiting and fever. Constipation was the rule. The symptoms lasted five days to a week, subsiding gradually. There were no complications nor sequelae.

Symptoms

The most frequent symptom, frontal, splitting headache, (table 1) occurred in 98% of the cases.

Table 1.—(96 *Cases*)

	No. Cases	%
Headache	94	98
Vomiting	76	79
Aches and Pains	19	19
Cough	3	
Chills	1	
Skin Eruption	1	
Irrational	1	
Average Temperature	100½	

Projectile vomiting with little nausea was the next most frequent symptom—76% of the cases. The vomiting was often so severe that it interfered with treatment. Generalized aches and pains were present in less than a fourth of the cases. Cough, painful eyes, chills and chilly sensation, skin eruptions, and confused mental state were rare.

Physical Signs

The temperature ranged from normal to 105—average 100.5°. In all cases the tongue was heavily coated, dark brownish grey. The breath had a characteristic odor almost diagnostic. The conjunctivae and the nasopharynx were mildly injected, the heart, lungs and abdomen normal in all cases. No weakness or muscular paralysis occurred in any of the cases. In a few cases, there was some pain on motion of the neck, but in no case was there any rigidity of the neck. Kernig's sign and Brudzinski's sign were absent in all cases. None had ptosis of the eyelids. The eye movements were normal in all. In one case there was a generalized urticarial rash that was probably not a part of the disease, as there was no skin eruption in any other case. The physical findings were

*Presented to the Catawba Valley (N. C.) Medical Society, meeting on March 14th.

few in comparison with the severity of the symptoms.

Laboratory Findings

As all of the cases were treated in their homes or as office patients, complete laboratory studies were not possible (Table 2). A moderate leukocytosis with a relative increase in polymorphonuclear cells was the rule. The urine was normal. Examination of the spinal fluid was not practicable.

Table 2

Sex	Age	Temp.	Pulse	W.B.C.	Poly.	S. L.	L. L.	Eos.	Bas.	M
M	20	100	80	1150—	86	9	4	4	1	0
M	15	100	78	8700—	78	10	6	0	2	0
M	9	100	85	8950—	80	12	8	0	0	0
F	22	103	108	8050—	85	7	3	1	0	4
		Average		9462—	83	9	4	1		

Differential Diagnosis

In the differential diagnosis of the disease occurring in the epidemic, devil's grippe or epidemic pleurodynia, non-paralytic acute anterior poliomyelitis, dengue, acute epidemic encephalitis, epidemic gastroenteritis and acute benign lymphocytic meningitis were considered. Tuberculous meningitis could not occur as a widespread epidemic; and it is one of the most fatal of diseases. Most physicians called the disease devil's grippe (epidemic pleurodynia) although the tetrad of symptoms—headache, vomiting, fever, and coated tongue—did not correspond to the pain along the costal margin and in the chest and leucocytes less than normal or normal in number, described by Galloway[10] in 1934 as occurring in epidemic pleurodynia. Dummer *et al.*[9] in their report of the Cincinnati epidemic of acute benign lymphocytic meningitis, state that at the same time cases of epidemic pleurodynia were occurring in the city and that the two were easily distinguished by the difference in the symptoms. As the symptoms of the disease in this epidemic resemble very closely those of non-paralytic anterior poliomyelitis and at the same time there was an unusual number of cases of poliomyelitis in the same area, the epidemic could be considered one of non-paralytic anterior poliomyelitis. Luichesi[13], in reviewing a similar series of cases in Philadelphia in 1935, concluded that the disease was non-paralytic anterior poliomyelitis, as more than half of his cases developed slight transient paralysis or muscular weakness. With the large number of cases of this disease that occurred, if it had been poliomyelitis it seems that some of the patients would have had muscular weakness or paralysis. The relative absence of generalized aches and pains and the lack of a skin rash differentiated the epidemic from one of dengue. The drowsiness to coma and the multitude of neurological signs of acute epidemic encephalitis were not present in this epidemic. Kinsella and Broun[12] and Hempelmann[13], from St. Louis epidemic of encephalitis described the disease as one of a multitude of neurological signs and coma due to the invasion of the central nervous system by a virus. The epidemic did not have any sequelae as does encephalitis. That the disease was not acute epidemic gastroenteritis is evident from the absence of nausea with the vomiting in the outbreak and of diarrhea.

Although all of Wallgren's[1] diagnostic criteria for acute lymphocytic meningitis cannot be met, the epidemic was one of acute benign lymphocytic meningitis. The acute onset of meningeal symptoms of headache and vomiting, a short mild course without complications, and the absence of other disease in the individual that might produce meningeal irritation meet part of Wallgren's requirements. At the same time, there was an increased number of cases of acute anterior poliomyelitis, which opposes one of Wallgren's points. Unfortunately the spinal fluid could not be examined for sterility and evidence of meningeal irritation to clinch the diagnosis of the epidemic as one of acute lymphocytic meningitis.

Treatment

The treatment was entirely symptomatic. Bed rest, ice cap to the head, light diet, purgatives for the constipation, and anaglesics and sedation were the essentials. Recovery without complications was prompt in all cases, and affected very little by treatment.

Conclusions

1. The literature on acute benign lymphocytic meningitis was reviewed.
2. An epidemic of acute benign lymphocytic meningitis occurred in this area during the months of June and July, 1935.
3. This disease was generally misdiagnosed by most physicians.
4. Acute benign lymphocytic meningitis can occur in widespread epidemics with a large per cent

of the population becoming infected.

5. Acute benign lymphocytic meningitis is a mild disease, running a short course, and terminating without complications.

Bibliography

1. Wallgren, A.: Une Nouvelle Maladie Infectieus du Systeme Nerveux Central. *Acta Paediat.* 4: 158 1925.
2. Viets, H. R., and Watts, J. W.: Three Cases of Aseptic (Lymphocytic) Meningitis *New England J. Med.* 200: 633-634 (March 28) 1929.
3. Armstrong, C. and Lillie, R. D.: *Pub. Health Report* 49: 1019-1027 (Aug. 31) 1934.
4. Armstrong, C. and Wooley, J.: Benign Lymphocytic Choriomeningitis *J. A. M. A.* August 7, 1937.
5. Abramson, J. L.: Acute Lymphocytic Meningitis *Arch. Neurol. and Phsychiat.*: 31:1235 (June) 1934.
6. Toomey, J. A.: Acute Lymphocytic Meningitis, *J. Pediat.* 8:148 (Feb) 1936.
7. Viets, H. R. and Warren, S.: Acute Lymphocytic Meningitis *J. A. M. A.* Jan 30, 1937.
8. Dominick, DeWitt: Lymphocytic Chriomeningitis *J. A. M. A.* July 24, 1937.
9. Dummer, C. M., Lyon, R. A. and Stevens, F.: Benign Lymphocytic Meningitis *J. A. M. A.* Feb. 20, 1937.
10. Calloway: Epidemic Pleurodynia *Southern Med. J.* Dec. 1934.
11. Luichesi, Paul: Non-paralytic Poliomyelitis versus Choriomeningitis *J. A. M. A.* May 1, 1937.
12. Kinsella, R. A. and Broun, G. O.: The Clinical Features of Epidemic (St. Louis) Encephalitis, *J. A. M. A.* Aug. 18, 1934.
13. Hempelmann, T. C.: The Symptoms and Diagnosis of Encephalitis (1933 St. Louis Epidemic) *J. A. M. A.* Sept. 8, 1934.

The Significance to Medicine of Present Population Trends

(Frederick Osborn, New York, in *Bul. N. Y. Acad. of Med.*, July)

Measures designed to increase births among competent people will be necessary to offset the further decline due to the extension of birth control Such measures will include economic changes which will reduce the cost of having and rearing children. More free prenatal care, reduced maternity costs and free health services for young children, seem almost certain items in the Nation's budget in the near future. But these and other measures for reducing the cost of children will not lead people to have larger families. It will be no easy task to increase the desire for children among thoughtful people in our urbanized mechanical civilization. Every type of social agency will have to take part in such an effort. The greatest changes will perhaps be required in educational institutions which, until now, have given little thought to the effect of education on the development of the emotional life of the individual. But the most direct influences will be those effected in personal contacts. It is difficult to imagine any effective change in people's attitude toward having children without including doctors in the list of those taking an intelligent part in attempting such a change.

It is to the doctor that a woman first confides her hope that she is to become a mother. Does the doctor report the results of his examination with a laconic statement that she is in trouble, or does he strengthen her with the realization that this is the normal fulfillment of her feminine role, to the probable improvement of her health, and to her future happiness? If she has already several children, is his attitude one of admiration or of commiseration? Shortly she must decide whether her confinement is to take place in a hospital or in her home. Is the doctor's advice weighted by consideration of where she will have the greatest comfort and pleasure in her baby, so that she may look back on the first few weeks after the baby's arrival as a period of infinite happiness? Will the nursing care and the environment during convalescence provide a favorable atmosphere? Students of population increasingly suspect that the attitude of the father often determines size of family. Does the doctor have this in mind and do everything possible to bring the father into an intimate relation with the thrilling and beautiful aspects of bringing a new life into the world? Or is the father excluded at the start, and thus brought to think of this only as a period of anxiety and painful separation?

In the first week or so of the baby's life, the mother must decide whether she will try to nurse it herself or have it fed on a bottle. In advising her what she should do, does the doctor take into account those subtle emotional needs to which modern psychologists give such weight? The need of the mother for the full development of that relationship with her child, which may be weakened at its inception if she does not hold it in her own arms and feed it from her own breast. The need on the part of the baby for that warmth of security, that fullness of satisfaction, for lack of which its own emotional life may be in some degree stunted.

After the baby is weaned, family contacts with the doctor continue. His attitude, and even sometimes his advice to both parents, will inevitably influence their decisions as to whether they should have additional children. Will the doctor in every case study these conditions, over and beyond the state of the mother's health, which affect the social desirability of their having more children; the home environment in which they will be brought up, the probability of their having a sound heredity?

Skin Vitamins: Vitamins A and D: Topical Applications

(R. R. McLaughlin, New York City, in *Med. Times*, July)

Vitamin D is absorbed by the epithelial cells of the skin, and in sufficient quantity to supply the needs of the individual if necessary.

In addition to the systemic effect observed, there is also a local effect at the site of application, which is much more pronounced than when the vitamin is ingested.

It is probable that vitamin D is not essential to some growth of epithelial cells and not sufficient to support epithelial cell growth by itself, but it is a powerful stimulant to cell growth in the presence of vitamin A.

From the 24th Annual Report of the Metropolitan Sanatorium

Of the 987 patients who were discharged alive and who on the 1937 anniversary of discharge had been away from the Sanatorium 8 years on the average, 63.5% were able to work. A small group of 17 had been retired on account of age. Patients unable to work comprised 11.6% of the total, and 1/5th of these were again undergoing treatment at the Sanatorium on the anniversary of their discharge in 1937. Death had taken 205—20.8%. Of 1.6% of the total, no information was available as to the state of health, although known to be living; less than 1% were untraced.

Of those in the minimal stage at the time of admission 80% were at work or able to work in 1937. Of the far advanced 2/5ths were at work or able to work.

Pointers in Diseases of the Thyroid Gland

William Francis Martin, M.D., F.A.C.S., Charlotte, North Carolina

A SURGEON'S interest in the thyroid gland begins when its normal function is disturbed. Thyroxin, made in the gland and poured directly into the blood stream, is a large factor in the regulation of metabolic processes. An essential to this functioning is the organ's enormous blood supply, which exceeds by several times that of any other organ.

The function of the thyroid gland has probably been disturbed when goiters form. Pliny observed "—only man and swine are subject to swellings of the throat"—an excellent illustration of the unreliability of the medical observations of laymen.

Operations for goiter have so often been followed by unforeseen fatalities that there is a general impression that surgical intervention is attended with great risks. My experience does not justify this attitude, though careful judgment is required in assigning to thyroid disturbance its appropriate management.

Indications for Operation

Operations on the thyroid may be performed for cosmetic reasons alone. Non-toxic goiter— diffuse or nodular— may so enlarge the neck and alter the appearance that a patient may demand removal of the mass that her social life may be made endurable. I consider it particularly desirable to remove the enlargement (leaving possibly 1/5th of the gland) when a previously quiescent adenoma begins to enlarge rapidly. Non-toxic nodular growths may enlarge to the extent that they impair the functions of other organs, particularly the respiratory (as in Case 1). A choking sensation due to pressure on the trachea, engorgement of the veins of the neck, and prevention of the expansion of the lungs (due to a goiter growing downwards into the thoracic cage) are often associated symptoms and are indications for operation.

The toxic thyroid diseases have other signs of disorganization in addition to those mechanically produced. Auricular fibrillation is a common occurrence in 10 to 15% of all thyroid patients. Both fibrillation and tachycardia are immediately benefited by thyroidectomy, suggesting, as Hertzler has pointed out[5], that the symptoms are due to poisoning from the goiter rather than degeneration of heart muscle.

When the goiter is accompanied by a pain radiating upwards behind the ear cancer may be suspected and this is an indication for operation. Between 4 and 6% of toxic nodular (adenomatous) goiters have been shown to be malignant; some surgeons say as high as 20%. Removal of a cancerous growth before it is clinically diagnosable trebles the chance of complete cure. Dinsmore and Crile have shown[6] logically that 2% of cancer is not diagnosed preoperatively, so even its possibility, plus cosmetic reasons, constitute indication for the removal of a noticeable goiter.

Removal of a large part of the gland may greatly lessen or completely cure the exophthalmos which is often present with toxic goiter. When this symptom is accompanied by a pulse rate around 120 or 140, loss of weight with increased appetite and a nervous manner there is indication for operation (see Case 2), though medical treatment with iodine, sedatives, quinine and bed rest may be beneficial.

Hyperthyroidism due to a toxic state of either diffuse or nodular goiter causing a wasting of body tissues by excessive metabolism is indication for operation, though only after adequate preparation. The condition is serious as it is usually found in patients of the middle years who have had the disease unsuspected for a long time and are consequently exhausted. Dinsmore and Crile point out[6] that 85% of deaths following thyroidectomy have occurred in patients over 45 years of age. These patients usually have a high pulse rate (though this in itself is not cause for concern unless iodine has been used). It is with these patients that I find preöperative preparation of paramount importance. The time chosen for operation must be in a temporary remission of the disease, or a thyroid crisis may follow with fatal results. Thyroid crisis itself is an imperative demand for surgical intervention, but only after adequate preparation.

In recognizing indications for operation I rarely attach importance to the patient's basal metabolism rate, save as a confirming factor, being of the opinion that clinical symptoms are usually sufficiently significant. Jackson has proved by tests on the same patients over a period of time that technical errors are of frequent occurrence even with good apparatus and technicians, and in any case the rate is only significant if one has a complete history of the iodine preparation of the patient, which, with all honesty of intention, is not

always obtainable. In patients with a diagnosed hyperthyroidism it is interesting to note a high basal metabolism recording as a confirmation, but one finds that moderate toxicity acting over a long period may have produced results as dramatic and as indicative of operation as acute hyperthyroidism, typified by a high basal metabolism rate, acting over a short period.

Selection of Treatment

It has been contended by Marshall West[14] and others that for patients who are bad operative risks, the multiple-stage operation is the one of choice. Those belonging to this school of thought usually do a preliminary pole ligation, then a right subtotal thyroidectomy followed by a left thyroidectomy. Usually a period of six weeks elapses between each stage, during which the patient's health is built up by preöperative preparation. My experience has led me to adopt this procedure only rarely, I believe that adequate preöperative medical preparation may be substituted in almost all cases except the critical. In extremley bad risk cases, usually when the patient is old, and debilitated by a long struggle with the disease, and an immediate fatality is threatened, I have occasionally performed a preliminary ligation of the superior thyroids under a local anesthetic, but in my opinion this is seldom desirable.

I am not convinced that any useful purpose is served by pole ligation. The procedure is technically difficult, and the patient is subject to the shock of this operation in addition to that of the following thyroidectomy. As it is almost impossible to prevent the blood passing through the thyroid gland, however many arteries may be ligated (as it is so richly vascular and its arterial system anastomoses freely with that of adjacent parts), it is impossible to prevent the elaboration of its secretion, which accelerates metabolism, reaching the circulatory system by some alternative route.

I am inclined to think that the benefits attributed to a preliminary pole ligation, preceding thyroidectomy by some weeks, could more reasonably be attributed to the coincidental bed rest and medical treatment. With nearly all bad-risk cases I consider that adequate preöperative preparation is all that is necessary before performing a subtotal thyroidectomy. This preöperative care should be directed to calming the nerves, with complete rest in bed without bathroom privileges, a very limited number of carefully chosen visitors, and no discussion of the operation or of time when it is to take place. Treatment should also be directed to counteracting the effects of disturbed metabolism. This may include any or all of the following according to the nature of the particular case: uninterrupted administration of glucose intravenously for the elevated metabolism, Lugol's solution to lessen the thyroid activity, glycogen as protective material for the liver, digitalis and quinidine to prepare the heart if there is cardiac decompensation or fibrillation, and oxygen tent because with increased metabolism there is a tremendously increased demand for oxygen, blood transfusions to increase the hemoglobin that it may readily absorb the oxygen, aspirin and ice packs to control the hyperthermia, and small doses of morphine or paraldehyde or sodium luminal to quiet the patient and give mental relaxation. Injections of beef or sheep blood have been tried by Minnig[15] with satisfactory results, but I have never used these in preöperative preparations. (The treatment was suggested by Dr. Bier of Berlin.)

Meats, pastries and condiments should be left out of the diet, and milk and carbohydrates should be introduced freely. If death occurs within 72 hours after operation it may be taken to mean that there has been inadequate preparation or that a mistake has been made in measuring the power of the patient to stand the operation at the time selected, provided that there are no postoperative complications such as mediastinitis, pulmonary embolus, coronary occlusion and similar unpredictable conditions having no intimate association with the thyroid disease.

Summary and Conclusions

The surgeon must often operate for thyroid disturbances. Non-toxic goiters may be removed for cosmetic reasons or because the function of other organs is impaired. A malignant tumor is a definite indication for operation. To ic goiter producing exophthalmos is an indication for operation.

Hyperthyroidism causing rapid wasting of the body tissue is an indication for operation. A high basal metabolism rate may be regarded as a confirming factor but too much reliance should not be placed on this rate in diseases of the thyroid.

Thyroid crisis may benefit by surgery if the patient is suitably prepared.

Pole ligation and stage operations should be avoided, and adequate preöperative preparation substituted.

Report of Cases

Case 1.—White matron, 31, seen October 22nd, 1937, complaining of having a goiter. Family history was uninstructive. The goiter made its appearance 14 years ago. For the past two years its growth has been more rapid. Now it interferes with breathing and causes a choking sensation, awakening the patient with a feeling of suffocation. In the past 2 years she has lost 20 pounds. The Menstrual flow for the past 2 years has been irregular and very scant.

Examination: There is a definite enlargement of the thyroid gland, no exophthalmos. Area of cardiac dullness is normal, pulse rate 100, a fine tremor of hyperextended fingers. Physical examination otherwise negative.

Patient was put at complete bed rest and given 10 m. Lugol's solution t.i.d. p.c. for 2 weeks. At the end of that time she showed great general improvement and had gained 7 pounds, so (November 4th) a thyroidectomy was performed. Pathological report (Dr. W. M. Summerville): The specimen consists of two pieces of thyroid tissue which are irregular in outline. Cut surface shows the tissue to be divided into irregular areas by thick bands of fibrous tissue. There are several cystic areas present and several small areas of calcification; microscopically the tissue shows alveoli of very variable size filled with acidophilic colloid. Many of the alveoli are lined by flattened epithelial cells, others by cuboidal epithelal cells; the colloid in these latter is vacuolated. There are a few areas of lymphoid hyperplasia.

Diagnosis: Cystic non-toxic nodular goiter with calcification. The patient made an uneventful recovery, and by December 4th, she had returned to her normal weight. On January 10th., 1938, when she was dismissed, she had no tremor nor other complaints, and stated that she felt well.

CASE 2.—White farmer, 53, seen December 17th, 1937, with goiter of 3 years standing. Nothing revealing in family history. For past 7 years he has had indigestion with a choking sensation and gradual enlargement of the goiter for the past three years.

Illustrating Case 2

Examination: Definite exophtalmos, definite enlargement of both lobes of the thyroid gland, regular pulse with rate of 140, area of cardiac dullness normal, definite tremor of the fingers during extension. Patient was given bed rest, Lugol's solution, 15 m. t.i.d. p.c., and luminal 1½ grains for sedation for 6 weeks. Patient showed a marked improvement and on January 25th, 1938, a thyroidectomy was performed under gas-ether anesthesia.

Pathological report (Dr. W. M. Summerville): The specimen consists of a single incised piece of thyroid tissue which is smooth in outline; cut surface has a mottled pinkish-white appearance. Microscopically the tissue shows acini of variable size, the majority of which contain acidophilic, vacuolated colloid and are lined by columnar epithelial cells; an occasional acinus is markedly distended by colloid and lined by flattened epithelial cells; many of the smaller acini are without colloid and many of the larger acini show epithelial papillations; there are occasional areas of lymphocytosis, and a moderate increased vascularity.

Diagnosis: Graves' disease. The patient made an uneventful recovery and on February 2nd, 1938, when he left the hospital, his general condition was good; pulse rate 88, temperature normal. On March 4th, his condition was good, he had gained 10 pounds and he was dismissed.

References

1. BARTLETT, W.: The management of toxic goiter in a new light, *Trans. Amn. Assn. Study Goiter*, 7-13, 1935.
2. BOOTHBY, W. M. AND PLUMMER, W. A.: The variability of basal metabolism, *Trans. Amn. Assn. Study Goiter*, 143-151, 1937.
3. CRILE, GEORGE, JR.: The management of a patient with Hyperthyroidism, *S. Clin. N. Amn.* 16; 1051-1059, Aug. 1936.
4. DAVIS, J. W.: Goiter, *Sn. Med. & Surg.* 100, 322-323, 1938.
5. DAVIDSON, MARSHALL: Two-stage Lobectomy, *S. G. & O.* 65: 385-388, 1937.
6. DINSMORE, R. S. AND CRILE, G. JR.: Thyroid problems, *S. Clin. N. Amn.* 859-883, 1935.
7. GILLETTE, N. W.: Recurrent hyperthyroidism, *Trans. Amn. Assn. Study Goiter*, 87-93, 1937.
8. GOETSCH, E., CRILE, G. AND MEANS, J. H.: Thyroid gland. *Cyclop. Med.* 12.
9. HERTZLER, A. E.: The Degenerative goiter heart, *S. W. Med.* 22; 131-133, 1938.
10. HUNT, C. J.: Intrathoracic goiter, *Trans. Amn. Assn. Study of Goiter*, 108-114, 1934.
11. JACKSON, A. S.: Needless Thyroid surgery (Analysis of 100 cases), *Trans. Amn. Assn. Study of Goiter*, 73-77, 1937.
12. LAHEY, F. H.: The management of severe hyperthyroidism, *S. G. & O.*, 64; 304-312, Feb. 1937.
13. LAHEY, F. H.: Critical thyroid states their diagnosis and treatment, *S. Clin. N. Am.* 16; 1521-1531, Dec. 1936.
14. MARSHALL, S. F. AND WEST, T. H.: Stage operations in severe hyperthyroidism, *S. Clin. N. Am.* 1557-1581, Dec. 1936.
15. MINNEY, A.: The Medical Management of [illegible] *Trans. Amn. Assn. Study of Goiter*, 1[illegible]
16. NORTHEN, A. H. AND NORTHEN, W. A. T.: [illegible] of the thyroid gland *Trans. Amn. Assn. Study of Goiter*, 15-20, 1936.
17. ROGERS, F. E.: Some problems of thyroid disease, *Trans. Amn. Assn. Study of Goiter*, 105-111, 1935.
18. WILDE, R. W.: The prevention and treatment of goiter, *Trans. Amn. Assn. Study of Goiter*, 84-92, 1935.

EXEMPLIFYING new therapeutic uses (H. T. Hyman, in *Jl. Mt. Sinai Hosp.*, July-Aug.) for familiar drugs is the use of emetic doses of ipecac in the treatment of paroxysmal cardiac irregularity. It is less dangerous than digital pressure on the carotid sinus and more rapid in action than quinidine.

PERSISTENCE is the distinguishing characteristic of a filling defect.

A Survey of Intestinal Helminths in Orange County, North Carolina[1] [2]

H. W. Brown, M. D., and A. J. Sheldon, Sc. D., Chapel Hill, North Carolina

THE incidence and distribution of hookworm infection in North Carolina was investigated by the Rockefeller Sanitary Commission during the period 1910-1914. Their survey of 201,195 persons showed that 36.6 per cent of the rural population was infected with hookworm. Hookworm disease was therefore considered to be a major public health problem, and large numbers of persons were treated. A follow-up survey was made by Keller, Leathers and Knox in 1935-1937. Their study indicated that there had been a marked reduction in the incidence of hookworm in North Carolina in the twenty-two years intervening between the two surveys. Of 37,391 persons examined, 12.3 per cent were found to harbor hookworms. Orange County, however, was not included in either investigation; therefore data are not available on helminth infection with which to compare our findings.

The present survey was undertaken to determine not only the prevalence of hookworm infection in this county, but also that of other intestinal helminths. It was carried out during the months of November and December, 1938, and January, 1939. Specimens were collected only from children of school ages, since it is this group which is most likely to harbor intestinal helminths.

Materials and Methods

Specimens of feces were obtained in one-ounce tin sample containers which were distributed to the various white and colored grade schools in the county by the Public Health nurses. Information as to age, sex and color was obtained along with the specimens. The specimens were brought into the laboratory and kept in a refrigerator until examined by the salt-flotation method as follows: approximately, 1 gm. of feces was thoroughly comminuted in concentrated salt solution; the eggs of the various intestinal helminths were thus floated to the surface from which they were picked off and placed on a microscope slide by means of the open mouth of an inverted test tube. In order to ascertain the approximate number of worms present, Stoll dilution egg-counts were made on all the specimens containing hookworm or ascaris eggs. (Stoll and Hausheer, 1926)

Results of Survey

Fecal specimens from 661 school children were examined. Of these, thirty-four or 5.1 per cent contained helminth eggs. The types of helminths found are shown in Table I. Only one person, a white girl fifteen years of age, was found to have a hookworm infection, a 0.2 per cent infection rate. From egg counts made on her feces it is estimated that she harbored only eight hookworms —a very light infection. This child lives in a well sanitated home and wears shoes; but it was learned that a year previous to her examination she was living under very insanitary conditions and seldom wore shoes. About this time she was adopted by the family with whom she now lives. There are other children in her new home yet none of them was found to be infected with hookworm. Assuming that she has not been re-infected in her new surroundings her hookworms have maintained themselves for a year. This is in keeping with other studies which indicate that hookworms live from one to five years in their human host.

Single infections were found with whipworm (*Trichuris trichiura*), dwarf tapeworm (*Hymenolepis nana*) and the rat tapeworm (*Hymenolepis diminuta*). Of these, the rat tapeworm is found only occasionally in man, whereas the others are relatively common in the South. One infection with pinworm (*Enterobius vermicularis*) was discovered. As this parasite usually does not expel its eggs until it migrates out of the human intestine, fecal examinations are not an accurate index of its prevalence. Examinations of specimens obtained by means of anal swabs indicate that the infection rate of this parasite is at least five per cent.

By far the most prevalent intestinal helminth found was the ascaris. An analysis of the incidence of infection according to age and color groups is given in Table II. It is seen that there were twenty-nine infections with ascaris among the 661 persons examined, an incidence of 4.4 per cent. The rate of infection among the colored persons was 9.1 per cent, among the whites 1.2 per cent. The age group, 5-9 years, showed the highest incidence of infection, 5.7 per cent of white

1. From the Division of Public Health, School of Medicine, University of North Carolina.

2. The authors wish to thank Dr. William P. Richardson, District Health Officer, Orange-Person-Chatham District Health Department, for his invaluable assistance in this survey. He not only took an active interest in the work but also gave the aid of his staff in carrying it out.

and colored, as compared with 2.9 per cent in the age group, 10-14 years, and with 1.7 per cent in the age group, 15-19 years. Among the colored children the infection rate was 13.3 per cent, in the age group, 5-9, which was more than twice that of the age group, 10-14, and three times that of the age group, 15-19 years.

An analysis of the entire series of examinations of white and colored children indicated an approximately equal distribution among males and females.

Table I

Intestinal Helminths Present in Entire Series of Orange County, N. C., White and Colored School Children Examined.

Parasite	Number of Persons Infected			
	Race			
	White	Negro	Unknown	Total
Large round-worm (*Ascaris lumbricoides*)	5	22	2	29
Hookworm (*Necator americanus*)	1	....	..	1
Whipworm (*Trichuris trichiura*)	..	1	..	1
Pinworm (*Enterobius vermicularis*)	1	..	..	1
Dwarf tapeworm (*Hymenolepis nana*)	..	1	..	1
Rat tapeworm (*Hymenolepis diminuta*)	..	1	..	1
Total	7	25	2	34

The intensity of infection with ascaris among the white and colored children was determined by means of the Stoll dilution egg-count. The results are given in Table III. It is seen that the whites averaged 32 ascarides per infected person while the Negroes' average worm burden was 23.

Discussion

The results of this investigation indicate that hookworm infection does not constitute a public health problem in Orange County. From an examination of 661 school children, it was found that the incidence of this parasite is very low, 0.2 per cent. This is in agreement with the findings of Keller, Leathers and Knox for the adjoining counties of Durham and Person in the Piedmont region of the State. Durham County had an incidence of 0.9 per cent, Person 1.2 per cent. However, these authors reported a much higher incidence and intensity of hookworm infection in the Coastal Plain Region, especially in the counties of Onslow, Duplin and Brunswick, where the hookworm infection rates were over forty per cent.

It is difficult to attribute the low incidence of hookworm infection in Orange County to any one factor. Of primary importance, perhaps, is the fact that the predominant type of soil in this region is clay, which is not as favorable for the development of hookworm larvae as sand and sandy loam, the main soils of the Coastal Plain. It does not appear that temperature and rainfall are limiting factors to hookworm infection in Orange County. Methods of excreta disposal is another important factor. Judged by the absence of hookworm, it would appear that the facilities for excreta disposal in rural districts were entirely satisfactory in this county. That this is not the case is indicated by the prevalence of ascaris infections among this same group of children.

Our ascaris findings are similar to those of Otto and Cort (1934) for Columbus County, North Carolina, which is in the Coastal Plain. These authors examined 564 children, 324 whites and 222 Negroes, and reported an ascaris incidence of 12.0 per cent among the whites, 23.0 per cent

Table II

Incidence of Infection with *Ascaris lumbricoides* Among School Children of Orange County by Color and Age.

Age	White			Negro			Total		
	No. Exam.	No. Pos.	%	No. Exam.	No. Pos.	%	No. Exam.	No. Pos.	%
5-9	191	3	1.6	105	14	13.3	296	17	5.7
10-14	191	2	1.1	115	7	6.1	306	9	2.9
15-19	36	0	0.0	23	1	4.3	59	1	1.7
Total	418	5	1.2	243	22	9.1	661	27*	4.1

Table III

Intensity of Ascaris Infection in the White and Negro School Children of Orange County as determined by the Stoll Dilution Egg-Counting Technic

	Average Egg Count per c.c. of Feces (*Formed Basis*)	Average Estimated Number of Worms per Person
White Children	31,560	32
Negro Children	22,400	23

*No information on two cases, making total of 29 or 4.4 per cent.

among the Negroes. However, the number of worms, as estimated by egg-counts, harbored by the whites was considerably lower than that of the Negroes.

The presence of a moderately high ascaris incidence in the Negro school children of Orange County indicates that climatic and soil conditions are favorable for the propagation of this parasite. It is also indicative of habits of soil pollution and inadequate sanitary facilities for the Negroes. The finding of a low ascaris incidence among white School children in the presence of conditions suitable for ascaris indicates that the sanitary habits of the children and arrangements for excreta disposal are satisfactory for protection against this parasite.

Of the Negro children infected with ascaris one-third were in two schools. This suggests that the school may be the focus of infection.

The control and prevention of ascaris infections in Orange County would not seem to present great difficulties. Most attention should be devoted to the Negroes. An investigation should be made of the sanitary facilities and their use by those families with ascaris cases, and possible corrections should be made. Although ascaris itself rarely kills, its presence indicates sanitary deficiencies that might lead to typhoid fever and dysentery. In this respect ascaris can be used as an index of soil pollution.

Summary

Fecal specimens from 661 school children, white and colored, residing in Orange County were examined for the presence of intestinal helminths: 34 were found positive—29 for ascaris, one each for hookworm, whipworm, pinworm, dwarf tapeworm and rat tapeworm.

Adjoining counties, also, show a very low incidence of hookworm.

The ascaris incidence was 4.4 per cent—for white children 1.2 per cent, for Negroes, 9.1 per cent were positive. The highest incidence, 13.3 per cent, was found among Negro children of 5 to 9 years. There was no difference in the helminth incidence in the two sexes. The average estimated number of worms per person was 32 for the whites, 23 for the Negroes.

Bibliography

1. Keller, A. E., Leathers. W. S. and Knox, J. S.: 1937. The present status of hookworm infection in North Carolina. *Amer. Jour. of Hyg.*, 26:437-454.
2. Otto, G. F. and Cort, W. W.: 1934 The distribution and epidemiology of human Ascariasis in the United States. *Amer. Jour. of Hyg.*, 19:657-712.
3. Rockefeller Sanitary Commission for the Eradiacation of Hookworm Disease. 1911, 1912, 1913, 1914, 1915. Second, Third, Fourth, Fifth Annual Reports, Washington, D. C.
4. Stoll, R. N. and Hausheer, W. C.: 1926. Concerning two options in dilution egg-counting; small drop and displacement. *Amer. Jour. of Hyg.*, 6:134-145.

Malaria and Mosquitoes

(C. M. White. Engineer, in *N. C. State Bd. of Health Bulletin*, July)

Some mosquitoes never bite, others bite only cold-blooded animals such as snakes and frogs, while still others feed on us warm-blooded animals. It is believed that only one variety of mosquito, *Anopheles quadrimaculatus*, carries malaria in this State. Easily identified, by their slighter and more graceful build, their spotted or dusky wings, when standing on a wall they rest usuallly at an angle of 45° with the surface. Other mosquitoes rest slightly humped up with the line of the body parallel to the wall. Malaria mosquitoes rarely bite in the daytime. They are shy and easily driven off. They seldom bite a person who is moving about. The bite is not very painful and they do not sing loudly or often. The mosquitoes attracting the most attention are seldom anopheles and large numbers of anopheles can be present without attracting much attention.

Mosquitoes breed only in water—not in grass, weeds and chinaberry trees. Malaria mosquitoes breed in fairly clean, still bodies of fresh water, containing vegetation and floatage. The egg is lad on the surface of the water. After a few days this hatches into the larva or wiggle-tail, which soon becomes a pupa. From the pupa the adult mosquito emerges. All changes take place in water in 10 days or so, the development being slower in cool weather.

Anopheles larvae can easily be distinguished, lie flat on the surface and, and when very young, resemble a basking pike. The non-anopheline larvae hang head-downward and will dive when touched. If the anopheles larvae are touched they will usually glide away on the surface, although at times they will dive.

When the anopheles mosquito bites a person with malaria, if she sucks up both male and female parasites, numerous young parasites are reared in her body. These are injected into other people bitten by the mosquito. Upon entering the human body they attack the red blood cells, where they grow and each divides into from 8 to 32 small parasites. Each of the parasites liberated attacks other cells and the process is repeated over and over. When the cells erupt a poison is released which causes chills and fever.

To keep the malaria mosquito from biting the most effective method is by filling or draining. When a pond cannot be drained keep clean and free of all vegetation, especially along the edges. Various mixtures of petroleum oil or Paris green dust applied to the surface of the water will kill the young wiggle tail mosquitoes. Every week or 10 days every home should be mosquito-proofed. A properly mosquito-proofed house has all windows, doors and chimneys covered with 16 mesh wire screen. All other openings should be entirely sealed.

The law requires that before anyone creates a pond a permit must be obtained from the N. C. State Board of Health, and that the pond be maintained in such a manner that it will not produce anopheles mosquitoes. Ponds covering less than one acre, used exclusively for watering livestock or other domestic purposes such as goldfish pools, etc. are not included n the regulations.

More than half a century before the founding of Jamestown, Va., the degree of Doctor of Medicine was awarded for the first time in America by the Spaniards at the University of Peru.—*Gaines*.

CLINIC

Conducted By
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North Carolina

A 44-year-old travelling salesman came to me March 8th, 1939. He stated that he had been in a serious automobile wreck near Lenoir on August 31st. 1937. Dr. J. D. Rudisill, of Lenoir, reported that he was brought to the hospital unconscious with a basal skull fracture, severe contusions of the entire body and numerous lacerations. He remained unconscious for several days. When he left the hospital he was still extremely nervous. Dr. Rudisill advised that he try the effects of hydrotherapy to hasten convalescence from his nervous condition. The patient, as a Canadian army officer, was in the firing zone almost continually for 3½ years during the World War. Dr. Rudisill suggested further that he consult either an internist or a neurologist for further study. However, he returned to Dr. Rudisill January 7th, 1938, and was advised that he might go on part-time work about March 1st, though he was then much troubled with swelling of his hands and legs, and numbness and tingling in his hands, legs and feet. A few weeks before consulting me soreness and tenderness was felt in the right occipital region 2 inches behind and slightly above the left mastoid process. At about the same time he became sore and tender over the spine of the 7th cervical vertebra His right shoulder "pops" on raising his arm. He has numbness in his forehead at the site of his old head injury. The swelling of his hands and feet has been severe, but this is decreasing. The tingling sensation is getting worse. He has occasional pains in his right chest at the site of old rib fractures sustained in the wreck. He has no true headache, but pain in his skull which is quite different from any headaches he ever had before the wreck. He has had no sphincter disturbances since recovering consciousness following his injury. For the past 3 weeks the little finger of his left hand has been painful.

He had severe influenza in 1918 in France. Dr. Murray Butler (deceased), of Toronto, examined him thoroughly in 1919 and said there was nothing organically wrong with him, and that he merely had a neurotic state such as would be inevitable in a man who had spent as much time under fire in the war as he had. He then attended the University of Toronto School of Practical Science for a year. In recent years he has worked for a large manufacturing concern located in northern New York State. In August, 1936, he met his chief on a railroad station platform in Philadelphia and felt as if he had overworked on an empty stomach and—to use his words—felt "queasy," and fainted. He was taken to the Abingdon Memorial Hospital where Dr. John Levering removed a ruptured appendix, and put in drainage. He had an attack of jaundice from which he recovered completely, at 16 years of age. Since his wreck his left eye gets bloodshot and his vision blurs whenever he gets emotionally upset. He is living comfortably from a financial standpoint, on total disability insurance benefits, but most uncomfortably from a physical standpoint. Some years ago he had a radical antrum operation by Dr. John Fairbairn, of Buffalo. He has had several teeth extracted.

His habits are good. He eats a mixed diet, pretty well balanced, thrice daily, and drinks tea, but no coffee. Has not used tobacco or alcohol since his appendectomy in 1936. Sleeps well except when numbness and tingling keep him awake, which is often.

His father died at 76 of a cerebral hemorrhage. His mother died of unknown cause, but had been anemic and blind from trachoma. One brother, who he said was one of Dr. F. G. Banting's "guinea-pigs," was said at first to have diabetes, and then not to have it, and died of uremia; 1 sister has a goiter; wife and one child well; 1 child was a blue baby and lived only 3 days.

Except for a worried nervous expression, the patient is a magnificently handsome physical specimen, ht. 6 ft. ¼ in., wt. 204 lbs. (standard wt. 183), T. 98.1, P. 76 and of good quality, R. 16, B. P. 120/80. He has a partial upper plate, cranial nerves appear normal, he is tender over the spine of the 7th cervical vertebra, his right shoulder is lower than his left, and "pops" on raising his right arm. Chest negative, spine negative except for the tenderness noted, abdomen negative except for appendectomy scar, abdominal reflexes normal, genitals negative, extremities show numerous small scars from old injury. Left biceps reflex is increased, right normal, knee jerks normal, no clonus or Babinski; gait, station and coördination normal, no adiadokokinesis. Says he feels best in a hot bath. Urine negative. blood Wassermann negative. He has a highly intellectual face, but talks and rambles almost interminably. He realizes this tendency himself, and that it, as much as his aches and pains, unfits him for work. The first examination took 3½ hours because of this terrific drive to talk; it was practically impossible to shut him off.

At this time I felt he had a pretty complex brain condition based on his injury, and advised that he see Dr. R. W. Graves at Duke Hospital, and, if Dr. Graves thought it advisable, Dr. Barnes Woodhall also.

Under date of March 28th, 1939, Dr. Woodhall reported on this patient. (Much of this being repetition of my findings, is omitted.) He notes that in the accident, the patient's car ran off the road into a ditch and patient was thrown into the back seat, losing consciousness for 20 minutes; then consciousness was regained for an hour, and for five days thereafter his mental state varied between consciousness and stupor, and he remembers little of this period. When Dr. Rudisill saw him, he was bleeding from ears and nose. His memory for recent events is now impaired, he has loss of power to concentrate, is easily fatigued and has uncontrollable outbursts of temper, though he has insight into all these states of mind. Occasionally he has sensations of unreality and a feeling of being enclosed in a glass case. Has occasional headache, but this is not marked. Has occasional vomiting. No diplopia, but some tinnitus, right.

His wife, a trained nurse, describes him as the perfect husband before his accident, but since then says he has been rude to her, suggested she has not been treating him well, and has dickered about money matters, whereas formerly he was very generous. He has become dictatorial. He has never threatened her, and sex relations are normal. Since his accident he has talked interminably about his experiences in the war, and the many minor injuries he received. Through this talk she learned for the first time that he had received a D. S. O. (Distinguished Service Order) and also learned of a court martial proceeding for a minor offence in which he participated. His attacks of talking are at times uncontrollable, and during them he may wander far afield.

Dr. Graves made an exhaustive neurological examination and concluded that the patient had a post-traumatic encephalopathy with personality change, a hypochondriacal psychoneurosis, autonomic imbalance shown by mild hypotension, and acroparesthesia which may or may not be due to to the hypotension. Lumbar punctures showed normal pressure, a slightly positive Pandy with 3 white and 1 red blood cells in the fluid studied. Spinal fluid Wassermann negative. All other laboratory findings essentially negative. On March 24th, he awoke with a headache, talked loudly and irrationally and was very irritable throughout the afternoon, and talked continuously until bedtime. Encephalography showed the right lateral ventricle to be dilated and to be from 1/3 to ½ larger than the left, and several pools of air were in the subarachnoid space over the left parietofrontal region—suggesting a generalized subcortical atrophy on the right side with an area of localized convolutional atrophy in the left partietofrontal region. Following encephalography he had headache and vomiting. In his outbursts of irrelevant talking it was almost impossible to leave his room. Dr. Woodhall's impression was that there had been a definite loss of cerebral tissue following the brain injury caused by the automobile accident. This is fully demonstrated in the encephalogram. He has no clear-cut neurological deficit, but shows evidence of mental change as noted above. This disability may be classed as total and probably will be permanent. An attempt at psychiatric rehabilitation was recommended, and he made plans to go later on to the Phipps Psychiatric Institute at Johns Hopkins.

From April 15th to 29th, 1938, his wife kept daily notes of his case. During this time swelling and tingling in his hands persisted. A walk of 40 minutes would fatigue him greatly. He was irritable and cross. He could not read without developing a headache and blurred vision, but had an urge to be constantly doing something. He would often wake about 3 a.m. and sleep no more that night. He complained of a sore tongue. He worked at making a hammock but got very tired and irritable. At times he would wander about the house at night when unable to sleep. After an hour of talking his speech would get thick at times. Much pain in right side of head. Pain in head and hands would sometimes wake him at night. At times his right thigh would feel numb. An hour and a half in a hot bath would do much to relieve his varied symptoms. He had crying spells at times, then would be cross, irritable, unreasonable and argumentative. At times he complained of pain in his eyes, but then developed a chalazion which was treated by an ophthalmologist.

By June 20th, 1938, his mental condition had improved a great deal. Much less rambling in his talk. Still troubled with insomnia, and when a pain hit him in the top of his head, his right leg would get weak and hurt. Expected to go to Phipps Institute soon.

On Sept. 30th, I heard from him. He was then in Baltimore, and still unstable mentally—one minute he would want his wife to leave and the next be planning to buy an electric range for her. Has been profane and obscene in his talk since his injury, but was not so before that.

Nov. 18th—Back from Phipps Institute. Left there 3 days ago and spent 2 days in Richmond with friends. Face looks much more relaxed than when he left. Feels much better. Says he is "perfectly all right." Still has a lot of his old symptoms, but has learned to disregard them very largely. They taught him to do this at Johns Hopkins, and apparently did a fine job.

Jan. 12th, 1939, he beat me a game of chess in 5 minutes. I thought I had him and he caught me napping.

Jan. 16th—Says his leg is about well (numbness in thigh, etc.). I beat him 3 games of chess, but his mentality and power to concentrate in the matter in hand seem about normal now.

Feb. 10th—Some more pains and tingling in hands and feet and in right side of head. Slight edema of right foot only.

Mar. 31st—Says he tends to ramble at times in sales talks—is trying part-time work now as experiment. However, he is improving.

May 6th—Travelled by himself by train and bus. Hard to plan things. Much fatigued and nervous.

In June he went back to the home office in northern New York where he is to have an office job of routine that he can do without much worry. This seems the best solution of his problem. After his rehabilitation at Phipps Institute, it was of prime importance to get him back to work to give him renewed confidence in himself and to stop the vitiating effect on his personality of prolonged disability insurance. Compete recovery is unlikely, but a useful, self-supporting, self-respecting life is now the outlook.

Dr. Grinnan an Archeologist

(Richmond *Times-Dispatch*)

Petrified forms of the first pre-historic life which wriggled in the slime and ooze of what is now Virginia soil more than a billion years ago have been collected by a Richmond physician along with bones of mammoth animals which ambled the forest some 90,000,000 years back.

Dr. St. George T. Grinnan keeps his collection in anything from cigar boxes to old medicine cabinets.

"This," he said, holding up a solid mass of bone considerably bigger than a man's head, "is the cervical vertebra of an animal, which probably lived not more than 5,000,000 or 10,000,000 years ago. It was found in Surry County and the bone is perfectly preserved."

Then he pulled out a jagged object as big as a man's two fists, obviously part of a gigantic tooth. It came from King William County and the mastodon to which it belonged lived some 150,000 years ago.

Other bones include a tiba (leg bone) of a diplodocus, which was found in a railroad cut between Lanexa and Toana 40 feet down in the earth. The bone is not even petrified, but is well preserved, Dr. Grinnan pointed out, although it bore its terrifying 50 ton-owner crashing through the forest 90,000,000 years back.

The prize of Dr. Grinnan's collection, however, is a gastropod, the oldest form of pre-historic life known, which was found 60 feet under ground at Presque Isle, the home of Mr. and Mrs. A. D. Williams. The gastropod is an inch and a half long and looks much like a minute corkscrew made of bone. It is approximately 1,000,000,000 years old, its owner declared.

Dr. Grinnan also owns half of a perfect trilobite, another of the earliest life formation. It was found in King William County.

SURGICAL OBSERVATIONS

A Column Conducted by

The Staff of the Davis Hospital

Statesville, N. C.

Blood Transfusion

Among the greatest advances in therapeutics within the past quarter of a century is the development of a simple, safe and effectual blood transfusion. The idea of giving blood to patients was conceived in the dim past, and very soon after the discovery of circulation by William Harvey, in 1916, blood transfusion was attempted. In 1667, so it is recorded, Jean Denys, court physician to Louis XIV, gave the blood of a lamb to a 15-year-old boy with good results; and in 1824, James Blundell, an Englishman, successfully transfused blood from one patient to another. The private investigation of Walter Brem and his writings on the subject of blood transfusions made the procedure more popular and explained in detail the technical requirements. The few successful transfusions performed before the demonstration of isoagglutinin and isolysin were successful because by chance the proper donor was selected. They stimulated a rather widespread use of the procedure, with such disastrous results to most patients and many donors as to cause enactment of laws forbidding the procedure under severe penalties.

Landsteiner, in 1901, established our present conception of isoagglutinin and isolysin, and with the further work of Jansky in 1907, and Moss in 1910, the procedure has been made practical and most of the dangers have been removed. The advantages of blood transfusions are clearly defined. The transfer of healthy blood fills a very useful place in the practice of modern medicine, and meets certain well defined indications.

Before considering some of the more recent developments in blood transfusion, a review of some of the indications and essential requirements is in order. Leistruk is quoted as saying in 1872: "Blood transfusions are indicated in all of these pathogenic conditions in which the blood is unfit to fulfil its physiological duties." The most common indications for blood transfusion are:

1) Hemorrhage
2) Anemia
3) Blood dyscrasias. Usefulness temporary
4) Carbon monoxide poisoning
5) Severe burns
6) Sepsis
7) Immunotransfusions (as in scarlet fever)

Blood transfusion is often life-saving in postoperative shock and hemorrhage, and in certain

conditions of severe anemia, primary or secondary. Blood transfusion affords means of strengthening and nourishing before the body would have time to respond to stimuli for the production of more blood cells.

For successful blood transfusion, very definite requirements must be met, the most important being the selection of a donor in perfect health, free by all tests of syphilis and malaria, non-alcoholic, and of a proper blood group. In emergencies the Ide test has been used to rule out lues. We find that this test is reliable, results conforming very closely to those of the Wassermann and Kahn tests.

Any of the well known classifications of blood types is acceptable when carried out with every precaution by a technician of adequate experience. Particular attention should be given to the type of serum. In no case should a serum be used that does not have a high titer. Finding that the patient and donor are the same type is not sufficient, but in every instance a complete cross match or cross agglutination should be carried out. The common use of the universal donor should be avoided as far as possible and the patient should be given blood of the type as nearly identical with his own as is obtainable. The records to be retained by the laboratory and made a part of the patient's chart are to be detailed and clearly expressed so that they can be interpreted by anyone.

The technic is an issue quite apart from this discussion. Many prefer to give blood directly obviating the need of an anticoagulant. Within recent years an increasing number have adopted the indirect, citrate method, with as great success, and much greater convenience. The dilution of the blood with citrate and saline solution may give the indirect method a distinct advantage. For twenty years this clinic has routinely used the citrate method with the greatest satisfaction. Other methods have been used with good results. If we have the choice we choose as donor one who has not taken food for several hours, preferably not for ten or twelve hours. Fasting reduces the amount of protein in the blood and, so, the number of post-transfusion reactions. The giving of a preliminary ¼ grain of morphine and 1/150 grain of atropine has also greatly reduced the number of reactions.

The great increase in the number of blood transfusions given within the past few years has brought about a demand for donors and the establishment of a professional donor service in many localities. It would be a distinct advantage and it is feasible to have in any center of surgical activity a central registry of available donors, a group of individuals typed and found to be in every respect satisfactory for this purpose. Whether it should be maintained on a professional basis or to relieve an emergency would depend on the particular locality. The establishment of such registry would often save valuable time and furnish a list of the rarer types available as donors, especially in emergencies.

Within recent months the blood bank has been used in a number of places. How practical it will be remains to be seen. In no case should it replace routinely the immediate procedure. It may have a very definite place in the large institutions, but in the private and smaller hospitals the need for blood can be better satisfied in other ways. We have not found it necessary as donors have always been available. The blood bank does have an advantage in that it permits blood to be collected, properly typed, and Wassermann and Kahn reactions determined. At the same time many changes take place in the blood that are a disadvantage. After 48 to 72 hours the leukocyte count has dropped to 25 to 50% of the original count; there are varying degrees of reduction in the glucose content; the fragility of the red blood cell is greatly increased, so much so that several cases of hemolytic jaundice following a blood transfusion have been reported; there is an increase in the potassium content of the plasma due to loss of potassium from the red cells.

Blood that has been kept in cold storage is better than none at all in cases of great emergency; but our experience has been that fresh blood is best to use and far safer.

We may consider blood transfusion as a well-established procedure in modern medical practice, that it fills certain well-known indications, and that when definite requirements are met it has its greatest degree of usefulness. Blood transfusion, properly carried out, saves lives, shortens convalescence and prevents complications.

A blood transfusion is a major surgical operation and everyone connected with it in the laboratory or the surgical staff should realize that the patient's life is in his hands, that on the quality of his work may depend whether the issue will be a life saved or lost.

In our transfusions we make use of:

1) List of available donors whose blood type has been determined and Wassermann and Kahn reactions found negative. Several hundred are available within a few minutes.
2) Laboratory technicians trained in performing the tests for the selection of suitable donors.
3) Special team for giving blood transfusions always available day and night.

Reactions following blood transfusions with us

have been rare and few over a long period of years, almost to the point of being negligible.

The results with freshly collected and immediately administered blood are so satisfactory that, so long as our present source of supply remains dependable, we shall not be tempted to make a change.

Undulant Fever

(H. F. Flippin, *Med. Rec.*, July)

The course varies widely and any organ may be attacked. Usual symptoms are weakness, an undulating fever, intense sweating, weight loss, painful joints and headache, onset is gradual, splenomegaly is seen in some cases and is about the only physical manifestation. A patient may have been ill for several months, yet appear to be in good health. Laboratory studies are always necessary for confirmation.

Complications—meningitis, arthritis, spondylitis, endocarditis, lymphadenitis, pericarditis, cystitis, peritonitis, cholecystitis, mastitis, pleurisy, salpingo-oophoritis and subcutaneous abscess.

The white cell count is usually normal, occasionally high or low. The sedimentation rate is increased. The blood agglutination test, the diagnostic method of choice, is positive in only a small percentage of cases.

A negative intracutaneous test usually rules out the disease. A positive reaction attains its maximum intensity after 48 hours and persists for as long as a week.

When the intracutaneous or the agglutination test is positive, one must determine whether these indicate an active infection or a state of immunity. To this end the opsonocytophagic power of the blood for *Brucella abortus* is determined. The number of bacteria phagocytized by the pmns. is a rough index of the degree of immunity.

Because the vaccine employed in the intracutaneous test may stimulate the production of opsonins and agglutinins, it is better not to perform the skin test until after the blood tests have been made.

The author recently published a report on five cases treated with antimelitensis serum (Sharp & Dohme): 1 c.c. of the serum was injected intramuscularly as a test dose and, if no reaction followed this test dose, 50 c.c. intravenously at 24-hour intervals for 6 days. Fifteen minutes were required for the injection of the serum which was diluted with 100 c.c. of salt solution. No other form of therapy was employed. All recovered within 3 weeks after treatment was started and have remained in good health for from 20 to 36 months.

Swimming and Health

(Dorsey Ketchum, Huntington, in *W. Va., Med. Jl.*, July)

Public health authorities in most states have advised adequate rules for construction, maintenance and bacteriologic examination of public pools. Notices should be posted at all pools in regard to proper conduct of bathers in order to maintain proper sanitation; that they should not enter pools if they are infected because of the harm they might do to themselves and others. Every chronic otitis media is a potential mastoiditis. The stay in the water should not be more than an hour. Diving feet first, hawking, blowing nose, etc. should be refrained from. An oily nasal spray just before entering the water and then an ephedrine spray on coming out have given good results.

It has also been advised that oily plugs of raw cotton which contain their natural oil be worn in the ears.

DEPARTMENTS

GENERAL PRACTICE

Wingate M. Johnson, M.D., *Editor*, Winston-Salem, N. C.

For eight years—with the exception of the Sabbatical leave of absence during which I presided over the North Carolina State Medical Society—I have occupied the editorial chair in this department. Let me quote from my first editorial, in the issue of this journal for July, 1931: "With this issue *Southern Medicine & Surgery* is inaugurating something unique in medical journalism. So far as I can learn, it is the only medical journal in the world that has a department entirely devoted to the general practice of medicine. It is exceedingly appropriate that it should be the first in this field, for its editor espoused with his usual vigor the cause of the general practitioner when it took as much courage as would be required to finance a chain of barber shops in Russia. . . . .

"It came as a great surprise to the new editor of this department when a letter from my good friend Dr. Northington informed me that 'You are to be, in fact you are, Editor of the Department!' So high is my regard for the editor of this journal that it hardly occurred to me not to accept the commission. . . . . Knowing that Dr. Northington and I hold many bolshevistic views in common makes me feel that there is little to fear from his blue pencil."

In this first editorial, I expressed a feeling of obligation to the editor of this journal which was very real. This obligation has increased with the years. The first money I ever earned with my pen was a prize for an essay in *Southern Medicine & Surgery* on "How Can the Family Doctor Increase His Usefulness and His Income?" This essay, in turn, was responsible for a paper read at the Tri-State Meeting in Charleston in 1930. It was Dr. Northington's influence that got me a place on the program, and his encouragement that led to the writing of the paper. The first essay was the basis for an article in *Harper's Magazine*, "A Family Doctor Speaks His Mind"; the second, for "Medicine and the Middle Class" in the *Atlantic Monthly*, and for an address before the New York County Medical Society.

This bit of autobiography is not by way of boasting, but to show how much Dr. Northington has had to do with the slight success that has blessed my hobby of writing. I would be completely devoid of gratitude if I did not appreciate his constant help and encouragement during the past twelve years.

An even greater surprise than the appointment as editor of this department came to me recently, when I was asked to be the editor of the monthly journal of our State Medical Society. Although painfully aware of my inadequacy, I have accepted the commission, because of a firm belief that a man who has been trusted by such a body of men as the North Carolina State Medical Society has a moral obligation to do his best to deserve such confidence. While publication of the first number is not planned until next January, my spare time until then will be so fully occupied that I am regretfully resigning as editor of the Department of General Practice. In doing so, I want to thank the readers of this department for their forbearance and encouragement during the past eight years; to bespeak for my successor the same cordial relationship with the editorial staff that his been my good fortune; to extend to the journal itself, *Southern Medicine & Surgery*, the best of wishes for the years to come and the friendliest of rivalry with the yet-unborn *North Carolina Medical Journal;* and to wish for Editor Northington—and for myself—a continuation of his warm friendship, sage counsel and good fellowship so long as we both live.

GYNECOLOGY

G. Carlyle Cook, M. D., *Editor,* Winston-Salem, N. C.

On Observation

In days gone by we have marveled at the old masters who could so accurately diagnose different cases by simply looking at the patient. For instance: while walking through the wards of a large hospital a teacher looked three or four beds ahead at a man who to the casual student showed no evidence of disease at all, in fact he didn't even look sick. The old master remarked, "why there's a man with sarcoma of the spleen". The teacher had never seen this patient before and probably never afterward; but, when several months later, the patient came to autopsy, sarcoma of the spleen was found to be the cause of death.

We marvel at this ability to observe obscure signs which are more or less pathognomonic of certain diseases; yet which branch of medicine has grosser or more easily observed signs of disease than gynecology? It is not only pathetic but a constant reminder of the weakness of our profession that so many gynecological cases go undiagnosed and untreated until the so-called neurotic patient has either become hopeless or has lost a great amount of her life and substance seeking relief. This is because few doctors of today are taught the importance of accurate observation, of the use of our five senses, as were our forefathers in medicine, and because of too much dependence on laboratory examinations.

For example: the inherent and innate feminine characteristics attract our attention even when we are not called upon to observe them for purposes of diagnosis, yet we miss those deviations from the normal which not only do not appeal to us as opposites, but point to definite clinical and pathological entities.

A common serious affection is the arrhenoblastoma which from its onset begins to produce a masculine type—with a husky voice, excessive facial hair, atrophy of the breasts, narrow hips, spindling legs, an escutcheon with its apex up, hair on chest and even hypertrophy of the clitoris, in an otherwise beautiful young woman.

The average lay person—man or woman—these changes interest, but only we doctors are influenced to make diligent search for the least enlargement of an ovary and note the increased density of an enlargement when found. We should recognize a solid tumor of the ovary for diagnosis of a surgical condition and at the operation we should recognize in the gross that such a tumor is so dangerous as to render conservative surgery of doubtful value. These tumors, whether they be fetal rests as Novak and others suggest, or new growths which result from abnormal hormone function, resemble testicular structures and are malignant. While they may not be as malignant as teratomas in the male, radical removal of the adnexa should be done.

The Consultation

(Edi. in *R. I. Med. Jl.,* July)

It is to the patient's advantage and satisfaction that the possibility of error in diagnosis and treatment be diminished by at least 50%, to have the opinion of one who has probably seen many similar cases and their outcome.

It is to the family doctor's advantage to have the possibility of error in diagnosis and treatment lessened to a great degree and to have a brother M. D. share the responsibility of the diagnosis and the course of treatment. The family doctor's knowledge as to cases of the type concerned is increased. The consultation is also of benefit to the family doctor in that it greatly increases his patient's confidence and esteem.

The consultation is of advantage to the consultant in that it contributes to his knowledge in his particular field of medicine. It gives him a share in the responsibility for the diagnosis and treatment of the patient. It adds to his prestige and professional standing.

North Carolina is the first State in the Union to have a compulsory immunization law against diphtheria.

In Enuresis.— Give excess of fluids till 6 p.m., then limit fluids rigorously.

OBSTETRICS

For this issue, Cloyce R. Tew, M. D., Raleigh, N. C.
Dept. of Obstetrics and Gynecology, Rex Hospital.

The Role of Calcium in Prenatal Management

Physicians who accept obstetrical patients are confronted daily by questions from these patients regarding things formerly left to the discretion of the doctor to advise about or omit as he saw fit. Today, however, with many of our profession writing in lay magazines, and certain magazines "specializing" in "enlightening" the public concerning medical matters, perhaps especially as to maternal care, it becomes our duty to keep well posted, if for no other reason, that we be able to discuss intelligently with the patient what she has read about pregnancy in her favorite magazine or heard discussed at her bridge club.

It is usual to have a gravida ask if she is to receive thus and so medicine "this time"; that Dr. So-and-So writing in this month's issue of such-and-such a magazine advises it and, in fact, the doctor who took care of her with junior had her take the same medicine or wear the same applicance or drink the same potion. Many of these problems simply do not lend themselves to discussion, but vary with the ability of the physician to dispose of them gracefully, with no deflection on his colleagues, and sparing the feelings of his patient by not considering the queries too lightly.

I do not doubt that certain of these articles, by focusing the physician's attention on them and making it imperative that he inform himself about them, have done much to improve prenatal care in care in this country; although the claims advanced by some writers insisting on the necessity for certain routines or the administration of certain medicines during pregnancy have been unwarranted

One of these questions often put to us concerns mineral metabolism, a matter of which our knowledge is still inadequate. Can we, by the administration of calcium during pregnancy, insure prophylaxis against tooth decay; and give the unborn child a better chance of survivng with a better set of bones and better teeth? How much calcium is required during pregnancy? Should it be given alone or in combination with vitamin D?

We may start with the fact that the average woman between 18 and 40 years requires about 0.75 grams of calcium per day to maintain calcium balance, and that the pregnant woman has to meet an increased demand which makes 1.6 grams per day the optimum requirement. It has therefore been the position, well taken I believe, of most of us that if we place our patients on a good basic diet which contains 1.5 to 1.85 grams of calcium daily there is no need for calcium medication. This amount of calcium intake can be obtained from green-leaf vegetables, orange and tomato juice and lettuce; or from 1.3 to 1.5 liters of cow's milk—the cheap, practical and natural way. Then the administration of more calcium will advantage neither mother nor offspring.

Those who state that calcium, over and above the accepted optimal requirements for pregnancy, along with vitamin D, will reduce the chance of "for every child a tooth" present an attractive case; but satisfactory evidence for this premise is wanting. A report recently made to the American Dental Association says there "is no appreciable change in the teeth of women during pregnancy or early lactation other than that which would probably occur in a similar group of non-pregnant women during the same period of time." It is further stated that if calcium is to be administered during pregnancy it should be with the understanding that it is more important for purposes of general hygiene than for effect on the teeth.

Scientific evidence has failed to establish any correlation between calcium metabolism, caries and pregnancy. We still have to rely on operative dentistry to maintain proper oral hygiene for what may be accomplished in the prevention of dental decay. As to the administration of calcium to the mother for the calcification of teeth of the unborn, embryology and physiology teach that this is a postnatal process and does not depend on the mother's ingestion of calcium over and above the requirements stated.

Prompt eradication of foci in the mouth is demanded because of their bearing on the course of pregnancy by predisposition to toxemias, pyelitis of pregnancy, phlebitis and even abortion following placentitis from distant foci.

Now let us consider what, if any, harm may be done by excessive calcium intake. Finola *et al.*, in a carefully controlled series, showed that mothers given calcium and vitamin D routinely produced offspring with excessive bone density, particularly of ribs, parietal bones and epiphyses at the knee. Hardening of the parietal bones prevents proper or easy moulding of the head in labor—often of extreme importance in borderline cases. Further, it has been shown that the administration of viosterol or irradiated ergosterol may cause calcification of the kidney *in utero*, and Brehn has shown that vitamin D (viosterol) causes calcification of the placenta, and that this action is greatly increased by giving calcium beyond optimal requirements.

In summary, I would say that we can safely take the position that all an obstetrical patient's calcium requirements are best supplied by an adequate diet with liberal quantities of milk, and that the mother's calcium can be drawn upon throughout pregnancy, such a diet being maintained, without producing osteoporosis or reducing the calcium content of the blood. Authentic data show that sclerosis of the bones of the fetus and calcification of some vital organs may result from its excessive use—conditions more injurious than those resulting from deficiency. The indication for administration of additional calcium during pregnancy should be when the required amount of milk causes too great a weight gain, or the patient is unable to take milk. Under such circumstances it would seem that dicalcium phosphate is the product of choice particularly since the calcium-phosphorus ratio approximates that found in bone. It should be given no nearer meals than four hours after or one hour before.

The use of calcium for particular indications, as eclampsia and to relieve the muscular cramps that occur during pregnancy, do not come within the province of this discussion since it is concerned with the exhibition of the drug on a specific indication and not viewed as in relation to the total requirements during pregnancy.

The urine of a faithful wife was regarded by the ancient Chinese as a cure for sore eyes.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

A Plea for Surgical Exploration in Cancer of the Stomach

Because the diganosis of cancer of the stomach is erroneously thought to be practically a death sentence, the medical profession must not think the condition is hopeless, but must take a belligerent attitude toward it. The physician should not be less persistent in behalf of the desperately ill patient than is the attorney who, with his client condemned to die, does not permit the criminal to be executed until every legal technicality, every possibility of appeal, of postponement, of executive clemency has been exhausted. The past has abundantly proved that no disease can be successfully combatted by attributing its effects to the will of God.

It behooves us to use every recourse to make sure the diagnosis is right. In an adult the history of indigestion, of loss of appetite, of pallor, of nausea, of loss of weight are suggestive. An epigastric mass without fever and without tenderness may in some cases be almost pathognomonic. The diagnosis, however, is usually made by x-ray study of the stomach after the ingestion of barium, but no matter how made there is always the possibility of error.

When cancer of the stomach is suspected, if the general condition of the patient warrants, surgical exploration should be done; for in no other way may accurate, detailed information be obtained. The size, the relationship, the fixation of the growth, the degree of lymphatic involvement, the presence of metastases in the liver or elsewhere may be learned only by operation.

At laparotomy, if there is found to be a possibility of cure by resection, this should be done for it is the only known method of cure. The experienced surgeon with a high operative mortality in cancer of the stomach is to be commended for fearlessly giving these patients the chance of cure which surgery alone offers. Often a large growth may be more easily removed than a smaller one. Resection of the stomach with removal of the growth is always the operation of choice. As a palliative measure even with metastases in the liver in obstructive cases it affords greater relief and offers a longer life expectancy than does gastroenterostomy. Palpable lymph glands, if at great increase of operative hazard, in our opinion, need not be removed. Many of them are enlarged from infection and given no trouble after the primary lesion is removed.

It is encouraging to know that of the patients who have survived gastic resection for cancer one fourth are alive at the end of five years and one fifth after ten years and more. Twenty to twenty-five per cent of the gastric cancers should be resected. That we are remiss in not giving a sufficient percentage of gastric cancer patients the benefit of surgery is proved by the fact that autopsy examination in cases of cancer of the stomach shows in one-fourth to one-fifth of them "no visible spread of the cancer beyond the walls of the stomach." In these cases death has been due to dehydration, obstruction, starvation, sepsis, perforation or hemorrhage. The lesion being still local many of them might have been saved by exploration and resection.

The preparation for operation of the patient is important. Most such patients are anemic, dehydrated and starved. Blood transfusions and intravenous administration of glucose solution should be given to many. A dilated stomach with fermentation and infection should be treated by repeated gastric lavage of ¼- to 1- per cent solution of hydrochloric acid as suggested by Horsley.

UROLOGY

For this issue JAMES M. ALEXANDER, M.D.,
Charlotte, N. C.

AGRANULOCYTOSIS FOLLOWING ADMINISTRATION OF SULFANILAMIDE

THIS case is reported to further emphasize one of the more serious toxic manifestations of this drug and the necessity of keeping the patient under close daily clinical and laboratory observation while sufanilamide is being given.

White bartender, aged 24, first seen by me on March 29th, 1939, with these complaints: weakness, fever, chilly sensations for two days, sore throat and gums for one day. He was perfectly well until March 1st, at which time he developed acute gonorrhea. On the next day he was placed on 40 grains of sulfanilamide per day for 10 days, then the dose was increased to 60 grains daily for another seven days—total dosage of approximately 800 grains. On that day he developed a morbilliform rash and the drug was discontinued. He was told to go to bed and force fluids. After five days he felt well enough to return to work. He continued to work for four days (until March 28,) when the symptoms became so aggravated that he was forced to go home. Past and family history is irrelevant.

He was well developed, well nourished, appeared acutely ill, cheeks flushed, prespiring freely. There was marked swelling of the soft tissues about the angle of the jaws. Pupils were equal and reacted to light and accommodation, no nystagmus, no conjunctivitis, fundi normal. No nasal obstruction nor discharge, no tenderness over sinuses. In the right maxillary region there was a small red furuncle showing no evidence of pus formation. Teeth were in good repair, gums spongy, reddened, and bled easily; small area of necrosis of the gums at upper incisors. Tongue was normal, pole of left tonsil showed grayish, necrotic area ½ by ½ cm., right tonsil was normal, pharynx injected. No palpable glands. Chest entirely normal, pulse regular and rapid, b.p. 110/70, heart normal. Abdomen and external genitalia entirely normal. Rectal examination negative. Over the sacrum there is evidence of an old pilonidal cyst which was incised one year previously. Nervous system normal.

March 29th: Hgbn. 101%, red cells 4,410,000, whites 2,500— lymphocytes 90%, large monocytes and transitionals 10%.

March 30th: Hgbn. 94%, red cells 4,650,000, whites 2,100— lymphocytes 92%, large monocytes and transitionals 4%, eosinophiles 4%. Urine sp. gr. 1.022, pH 7, no albumin, no sugar, microscopic examination negative.

March 31st: Whites 4,200—neutrophiles 7%, lymphocytes 85%, large monocytes and transitionals 6%, eosinophiles 2%.

April 1st: Whites 6,100—neutrophiles 28%, lymphocytes 66%, eosinophiles 6%.

April 2nd: Whites 10,400—neutrophiles 58%, lymphocytes 23%, large monocytes and transitionals 16%, eosinophiles 3%.

April 3rd: Whites 20,000—neutrophiles 67%, lymphocytes 19%, large monocytes and transitionals 12%, eosinophiles 2%.

April 5th: Whites 29,500—neutrophiles 89%, lymphocytes 11%.

April 7th: Whites 27,700—neutrophiles 85%, lymphocytes 14%, eosinophiles 1%.

April 11th: Whites 18,000—neutrophiles 85%, lymphocytes 15%.

April 19th: Hgbn. 95%, red cells 5,240,000, whites 17,700—neutrophiles 75%, lymphocytes 21%, eosinophiles 2%, monocytes 1%, basophiles 1%.

April 21st: Whites 15,100—neutrophiles 74%, lymphocytes 19%, monocytes 7%.

April 27th: Hgbn. 95%, red cells 5,800,000, whites 7,700—neutrophiles 56%, lymphocytes 7%, eosinophiles 4%, monocytes 3%.

Therapy: In the first 48 hours 60 c.c. pentnucleotide and a total of 14 c.c. of liver extract. March 30th: April 1st: and April 2nd: Transfusion each day of 200 c.c. citrated blood. April 3rd: Pilonidal cyst become infected and was incised, drained freely. April 5th: Developed an infection beneath the gastrocnemius muscle. Evidence of persisting infection for three weeks, but responded to conservative therapy and did not require surgical drainage.

Highest temperature, pulse and respiration recordings:

	T.	P.	R.
March 29th, (on admission)	104	110	22
March 30th	104.2	120	22
March 31st	102	110	
April 1st	102.2	100	
April 2nd	101	90	20
April 3rd	99.6	80	20

Following this date elevation of temperature never exceeded 99 2/5. Patient was discharged afebrile on the 15th day of April.

PEDIATRICS

G. W. KUTSCHER, JR., M.D., F.A.A.P., *Editor*
Asheville, N. C.

ASHEVILLE ORTHOPEDIC HOME

SINCE 1930 this editor has enjoyed the honor and privilege of being the attending pediatrician to the Asheville Orthopedic Clinic. This clinic is sponsored by the Asheville Rotary Club and the Asheville Junior League. During the past nine years the Clinic has grown from an attendance of a dozen or more patients to an attendance of over 175 patients per Clinic day. Clinic day has heretofore been the fourth Saturday of each month. During the past three years smaller clinics have been held in addition, on the first and second Saturdays. An additional clinic which has been held in Bryson City on the third Saturday of each month, is now discontinued. All patients are being examined at the new Orthopedic Home in Biltmore on Saturday mornings.

Watching the procession of crippled adults and children go through the clinic for the past nine years makes one wonder if there can be any more orthopedic cases in this part of the State. Yet we are advised that there are at least 2,000 patients yet to be seen and, unfortunately, more cripples are born every year, poliomyelitis still causes deformities, and accidents continue to occur. Why doesn't someone do something about the osteomyelitis situation?

State Medicine will not be able to overcome the medical ignorance of certain classes of people. Here is an example. A husky—*i.e.*, from the hips up—man was brought to the Clinic recently because he could not stand or walk. He was pushed about on a chair as he had grown too heavy to carry. Eleven years ago he had taken the first injection of typhoid vaccine because there was some typhoid fever in his mountain community. The following day he was paralyzed in his lower extremities. To him it was only natural to believe that the vaccine was responsible for his condition. And so he believed for the next eleven years until he was brought to the clinic for examination. It was a clear-cut case of poliomyelitis. Neither will State Medicine accomplish much in trying to convince certain parents that the aim of orthopedic surgery is to correct and not to destroy. Many children remain cripples because their parents are not familiar with the advantages of modern surgery. In a way, of course, they can't be blamed for harboring such fear. Probably no other class of people demand a guarantee of success and no danger as do these parents. Without it they refuse surgery and consequently help for their maimed child.

Last winter a drive was made by the Asheville Rotary Club and the Junior League to collect a sufficient sum to purchase and equip the present Orthopedic Home. A recently built home, which cost originally $125,000, on a hill outside Biltmore was purchased, with 30 acres of ground. It is fully equipped to operate as a convalescent home for crippled children, starting off with 40 beds. All patients must be admitted through the Clinic, which means there will be no charges made for services and care.

The institution is financed by local Asheville support and by the State and Federal Aid for crippled children. The permit to operate was granted from Raleigh the middle of July and at this time patients are being admitted for treatment and convalescent care. All surgery is to be done in the local Asheville Hospitals and the children are then removed to the Home for their convalescent care. Some time in the future an operating room will be installed so that the Home will be a complete Orthopedic Hospital. A benefactor to supply the x-ray outfit is all that is needed at the present time to complete the equipment necessary to make this institution the finest of its kind in the State.

The orthopedic surgery is done by Dr. J. T. Saunders, who has operated the Clinic for the past six years. It is his tireless energy and willingness to give freely of his talents that are responsible for the achievement of this Home. The success of the Clinic attests his accomplishments in orthopedic surgery in Western North Carolina. What is more pitiful than a crippled child and what greater joy can anyone achieve than to overcome such a deformity?

Preventing Hereditary Diseases Which Wreck Childhood

(Wm. Allan, Charlotte, in *Jl. Asso. Amer. Med. Col.*, July)

Our major problems in heredity are cardiovascular diseases, cancer and the mental diseases; but, today, I want to stay in water not over my head.

Taking retinitis pigmentosa as an illustration of hereditary blindness, there are families in which this pathologic trait is inherited by each of the three usual simple patterns of inheritance. Pedigrees of peroneal atrophy illustrate the three patterns of heredity and the same variation in severity and age of onset according to the mode of inheritance. Pedigrees of muscular dystrophy illustrate both sex-linked recessive and simple recessive heredity. In the former, the boys usually die before the reproductive age; in the latter, the children are hopelessly crippled in the second decade.

A pedigree of lobster-claw hands and feet illustrates recessive heredity. In several instances this defective gene was lethal when first cousins in this family married. A recessive pedigree of hereditary congenital deafness shows 21 children born deaf and dumb in three generations.

In the recessive patterns, the appearance of blindness and crippling is almost invariably due to cousin marriages, and the young people in families in which such traits are known to exist must be warned against marrying their kin; since the deaf, three times out of four, marry deaf partners, it is very necessary that those who inherit congenital deafness avoid partners with the same hereditary trait.

To whom shall people go for eugenic advice? Manifestly, the family physician. Why do doctors know nothing about heredity? They are taught nothing about heredity in medical schools. Why is heredity not taught in medical schools? Only the teachers can answer this question.

As a practitioner, it seems to me that in the medical curriculum genetics now deserves as much emphasis as bacteriology.

TUBERCULOSIS

P. P. McCain, M.D., *Editor*, Sanatorium, N. C.

Thoracoplasty Operations for Patients in the Older Age Group

The operation of thoracoplasty is such a serious one that it should be performed only by surgeons with broad general surgical experience who have had special training for some months or longer in chest surgery. It is tragic for one with advanced tuberculous to go through this trying experience only to find after the two or three stages of the operation that his cavity is still open and his sputum still positive for tubercle bacilli.

Fortunately, in recent years there have been so many improvements in the operative procedures

and in the after-care of the patient that the results in the hands of competent surgeons and in properly selected cases are almost uniformly good. In fact, skillful surgery and expert after-care have made the benefits of this operation available to many patients for whom, a few years ago, it would have been considered unsuitable. For many years it was generally considered that the tendency to lowered vitality, fibrosis, emphysema, arteriosclerosis, greater susceptibility to postoperative nephritis and beginning degenerative changes in the myocardium constitutes a contraindication for the operation in patients over 50 years of age.

In a paper read before the recent meeting of the American Sanatorium Association in Boston Dr. Richard H. Overholt gave so encouraging and stimulating a report of his results in a large group of older patients that I quote below a portion of the abstract of his paper:

"Results obtained by the author in performing thoracoplasty upon patients during their fifth, sixth and seventh decades of life do not justify such pessimism. On the contrary, thoracoplasty has been tolerated extremely well. In a series of 162 patients between the ages of 40 and 65, treated by thoracoplasty, the operative mortality has been essentially the same as that attending operations upon patients under 40 years of age. End results also have been gratifying. The medical departments of various referring sanatoria select each year a greater number of the older patients for permanent collapse.

It logically follows that the permanent type of collapse provided by thoracoplasty should benefit patients in the older groups. Extensive destruction of pulmonary tissue leaves the patient with uninvolved portions of lung too small in volume to fill their own thorax. It is well known that readjustments may take place in which mediastinal shift, narrowing of intercostal spaces, diaphragmatic elevation, emphysema etc., may permit fibrous contraction of the walls of cavities. Frequently, however, a distorted and over-stretched fibrotic lung fails to withstand the stresses and strains of even moderate physical activity. Cavities reappear, inactive disease flares up, or tearing of scar tissue results in pulmonary hemorrhage. Older patients who have developed resistance to the infection suffer more from residual effects than from toxic effects of the disease. The residual effects are mechanical in nature. Thoracoplasty benefits patients in a mechanical way, therefore the operation should be applicable for older patients. A carefully graded and selective thoracoplasty reduces the volume of the thoracic cage so that the lung, which has been reduced in volume by disease, will fit comfortably within the thorax. The alteration in the position of the thoracic wall not only permits relaxation of fibrous tissue and cavity closure, but readjusts the position of the remaining healthy lung with improvement in its function. Patients in the older group demonstrate well the benefits that may be derived through the mechanical accomplishments of surgery."

The Role of the General Practitioner in Tuberculosis Control

(R. M. Alley, Lapwai, Idaho, in *Dis. of the Chest*, July)

The treatment of the patient with an initial or a minimal lesion may often be successfully accomplished by the family physician. A certain number of patients refuse to believe that tuberculosis is present when the diagnosis is made in the early stages, and others will refuse treatment no matter how much involvement is present.

The diagnosis of tuberculosis does not depend upon complicated procedures requiring special training. A careful history, a careful physical examination and sputum examinations are necessary. With children and young adults the tuberculin test is invaluable. X-rays are indispensable.

Many local physicians believe, and rightly so, that the testing should be done by themselves. But first, many of these physicians will have to acquaint themselves with the technique and value of the tuberculin test.

In order to obtain the full coöperation of the physician in general practice, he must first see the importance of the tuberculosis problem and the value of a careful examination, tuberculin testing and x-ray examinations.

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

Can Your Hospital Afford A Business Manager?

One of the problems of a small hospital is that of a business office. Every board of directors is confronted with the question: can we afford a business manager? It has been our experience that the sooner this question is answered in the affirmative the sooner will the small hospital be able to balance its accounts and establish itself as a business institution.

The superintendent of a small hospital is usually a graduate nurse. Because she is a woman she will accept almost any duties imposed upon her by a board of male directors. However, any board of directors of a hospital, no matter how small, should carefully investigate the many duties imposed upon her professionally. If they do this it will be evident that they are asking too much when they request her to take care of the business side of the hospital. No one head can be so wise and so proficient as to take care of the professional and the business side of even a very small institution.

The superintendent usually arises around 6:15

or 6:30. By 7:00 she has finished her breakfast and is on duty. First she receives the night report from the night supervisor. This means a short history of the events of the night on every patient. Then the conduct of the nursing staff, orderlies and maids is reported. A more detailed history must be reported on all new patients which have been admitted through the night. This gives the superintendent a working knowledge of her institution for the day. She next holds staff conferences with the heads of each department. This is very important and every superintendent should be given time for this conference each morning. She next must visit every patient and remain in the room long enough for each to realize and appreciate that the head of the institution is vitally interested in his welfare. When this is done her day's work begins!

Supplies must now be delivered to the various departments. A careful check must be kept on each department to see that no waste is allowed. Here she must have the help of a business manager if she is to succeed. An enormous waste can take place under the supervision of the best possible superintendent unless she has the coöperation of everybody in the hospital, and particularly the business office. No one should be given a free hand without responsibility. This means that each employe should be responsible to someone for his economical as well as for his professional conduct.

If your hospital carries a set of books, extends credit, buys supplies and pays bills then you should have a business manager. His duties are numerous but in no way conflict with those of the superintendent if she is a graduate nurse. He can save more than his salary during the first year if he is fitted for the job.

Unless one has had experience in purchasing for hospitals it is hard for him to realize the difference in prices of supplies and materials used for the same purpose. "Two per cent discount within ten days" saves an enormous amount of money in the course of a year. Almost invariably purchases will carry some discount but always more discount for cash. There are always slack periods in every business at some time in the year. If purchases are made from business houses in their slack period much more consideration can be obtained. Coal can be had for $2.00 to $3.00 a ton less in summer than in winter. The same thing will hold true of flour, potatoes, meal, etc. Painting can be done much cheaper in winter because painters have very little work to do in bad weather and will take a contract much cheaper at that time.

Good advice to directors of small hospitals is: hire a business manager. It may be difficult to locate one who has had experience but there are a number of young men now taking training for this position. Some of our large hospitals in this State are training men who should make excellent administrators for small hospitals as soon as they finish their apprenticeship. It is no longer an experiment to hire a business manager. Experience has proven to every hospital which has tried it that the business manager is a great economic asset.

The Hospital and the Doctor

(W. J. Carrington, Atlantic City, in *Jl. Med. Soc. N. J.*, July)

The office of the family doctor is the health center of the community. When we forget this our troubles multiply.

Today 85% of sick people suffer with illnesses which can be diagnosed with no more complicated instruments than can be carried about in the doctor's handbag; only 15% require expensive apparatus and special skill, often available only in the hospital. Treatment also is more complex and may require costly instruments or constant observation which are often to be had only in the hospital.

During the depression, thousands of commercial firms went into bankruptcy, but not a single hospital has defaulted its service to humanity.

One of the modern complexities is the question of *hospital privileges*. It is only fair to keep private wards, at least, open to all reputable doctors in the community who conform to hospital practices. Nevertheless, unscrupulous, careless and over-ambitious doctors must be limited in their privileges.

Choosing personnel on merit alone is as difficult as it is desirable. Too often politics, social and denominational connections, and even the financial needs of the institution determine staff selection.

Only 3.9% of the income of New Jersey hospitals is derived from endowment; 75% of the income is derived from self-sustaining private patients, the remainder from donations and tax money.

There should be a readjustment of private room charges and there should be an increase in accommodations for private care of persons in moderate circumstances, *consisting of small unpretentious rooms at the lowest range that will meet operating expenses.*

The Role of Cevitamic Acid in Various Clinical Conditions

(M. A. Spellberg, Chicago, in *Ill. Med. Jl.*, July)

The minimum of cevitamic acid per 24 hours to protect the average adult against scurvy is 60 mg.—the amt. in 4 oz. orange juice—per day; 100 mg. is preferable.

After all the work done on this subject there is no conclusive proof that vitamin C deficiency is the cause of any other disease except scurvy; or that its administration will cure any other disease. Diets inherently poor in this substance should be carefully supplemented. Patients suffering from diseases in which there is increased requirements such as febrile conditions, hyperthyroidism, malignancies or leukemia should receive an especially liberal allowance.

Bleeding from Meckel's diverticulum in a 10-months-old has been reported.

INTERNAL MEDICINE

George R. Wilkinson, M.D., *Editor*, Greenville, S. C.

All Your Directions in Writing and for the Individual Patient

Assuming that an individual has been carefulfully interviewed, painstakingly examined, and thoroughly studied in the laboratory, the doctor is then ready to sit down and have a final chat with the patient with regard to what he wants him to do. As a rule, the only thing that the patient has definitely in mind when he leaves the office is that he has some signed prescriptions for medicants that are to be used. While the medicants may be important, the advice as to hours of work, play, habits, changes and limitations in the usual way of living may be very much more important than these signed documents which the patient deposits in the apothecary shop.

Would it not be well in these matters to give this more important advice in written form? Perhaps the patient would feel more like carrying out the instructions if the doctor seemed to feel them important enough to be written down in detail. The memory may be poor; the spirit may be willing, but the flesh weak. Perchance other members of the family might like to know precisely what the limitations are. Their moral support would be more easily obtained and maintained, provided they also knew what the doctor wanted the sick man to do.

The next point is with regard to diet. We are all aware of the fact that what we eat and what we do is what we are.

The two methods all too frequently used consist of getting out a diet recommended for an ailment, written by somebody who lives somewhere where they don't eat the same things as they do where the patient lives, where things are not prepared the same way, coming from different stock in the beginning. Cyrus, many years ago, told his quartermaster general to constantly keep in mind that an army travels on its stomach. It might be well for those recommending diets also to remember that patients travel on their stomachs.

Some guidance as to the foods is essential as a rule. If the dietary is to be changed at all, the patient should have the suggested changes written out in terms of his ability to buy foods, on the one hand, and on the other hand, in terms of foods that can be obtained in the local market. A marked change in the dietary may be very much more important than a marked change in the medicants. Guidance along this line is of sufficient importance to be done in writing.

PUBLIC HEALTH

N. Thomas Ennett, M.D., Health Officer, Greenville, N. C., *Editor*

School Health Program

A symposium on health problems in education was presented at the recent meeting of A. M. A. in St. Louis. (*Journal A. M. A.* July 1st)

The discussion revolved around a tentative statement made jointly by the Child Health Section of The American Public Health Association and a committeee of the American Academy of Pediatrics, the chief features of which are as follows:

1. To provide a healthful environment. This to include the social and emotional tone of the classroom as well as attention to school sanitation.
2. A planned program for the care of accidents and sudden illness.
3. A planned program for assisting in the community program of contagious disease control.
4. To teach pupils habits and attitudes conducive to the maintenance of good health.
5. To encourage the periodic examination of pupils and to keep a cumulative record of the findings and recommendations.
6. To give special attention to those in need of medical care or dental care through a follow-up program.
7. To provide special education programs adapted to the needs of handicapped pupils.
8. To provide supervision and in-service training for teachers and place specific responsibility in the hands of some person especially qualified in education and school health work for coördinating all school health activities and relating these to community health programs.

We believe that most physicians and educators will accept these objectives as sound and progressive.

For the lack of space we shall make only the following brief comment.

It is our observation that while most rural and small town school health programs give attention to some of these points, the matter of the "emotional tone of the class room" meaning, of course, the emotional tone of the teacher, receives no attention whatever. Likewise corrective care for physical defects is wholly inadequate—due largely to the poverty of the parent and the small amount of time the general public health nurse has for follow-up work.

But it is our opinion the crux of the whole school health problem lies, chiefly, in paragraph eight.

Fatal Diving Injuries

(Bulletin Metropolitan Life Ins. Co.)

Broken necks, fractured skulls, and other serious injuries received in diving accidents result in *at least* 200 deaths in the United States each year. Very probably many more deaths result from spinal or other injuries which are not detected or are not reported on the death certificate. These accidents are concentrated in the three-month period June through August.

It might be supposed that when one decided to fall head-first from the edge of even a low diving platform, he would first assure himself of the absence of any special hazard, but many plunge heedlessly into the water. Of 100 Industrial policyholders of the Metropolitan Life Insurance Company who were killed in diving accidents, 68 percent lost their lives mainly because they failed to investigate, or to estimate correctly, the depth of water; that frequently the deceased had not before swum in the body of water in which he lost his life; that one man plunged into a pool which at the time was only partly filled; that some forgot that what was a safe diving area at high tide was far from safe at low tide; that others diving from boats failed to observe that they had drifted into shallow water.

Striking against submerged objects in water which the diver failed to examine before diving caused 18 of the 100 deaths; 14 of the victims hit their heads against rocks; one person collided with an oil drum, another with a tree stump; two persons diving simultaneously struck their heads under water. Other means were striking a previous diver who had not been given enough time to emerge; falling flat after a high dive; diving too close to a dock guard at a pier and striking it; diving off a swing, hung from a tree over the water, and misjudging the distance; falling beyond the deep part of the stream into muck; swinging from a diving board, miscalculating the swing, and striking the head against the concrete side of a swimming pool; diving from the back of a friend into breakers.

No dive should be undertaken before it is determined that there is enough water for the kind of dive to be attempted, and that the bottom is free from projecting rocks or other submerged objects near the surface of the water.

Lilly Gath, a regular patron of the dispensary because it is free, summons me in the dead of night, and then asks, "Do I owe you anything?" and answers herself: "I suppose not. You are my dispensary doctor, and, anyway, we have known each other for so long."

Leaves from a Doctor's Diary.

When something is constitutionally wrong with the chip, examine the block.

THERAPEUTICS

J. Fred Nash, M.D., *Editor*, St. Pauls, N. C.

Aminophyllin in Asthma

(G. T. Brown, Washington, in *Jl. Allergy*, Nov. '38)

A man, 74, had bronchial asthma off-and-on for 48 years, necessitating the frequent use of asthma powders and epinephrine hypodermically. Skin tests showed marked sensitiveness to linseed (flaxseed), moderate to ragweed pollen and house dust. Acute asthmatic attacks followed exposure to linseed products. He was so exhausted from dyspnea and loss of sleep that it was necessary to hospitalize him for a week, during which time he was given daily intravenous injections of aminophyllin, always with beneficial results. Following discharge, he developed one night a severe asthmatic attack that failed to respond to his customary remedies. The family physician found cardiac failure and pulmonary edema and promptly administered a small dose of morphine and atropine, followed by digitalis hypodermically. When I saw the patent some hours later, he was in coma, almost pulseless, with edema of both lungs, and breathing only a few times to the minute with a gasping type of respiration. It seemed that he had just a few more minutes to live. I added the contents of a 2 c.c. ampoule containing 0.48 gm. (7.5 gr.) of aminophyllin to 18 c.c. of 50 per cent sterile dextrose solution in a 20 c.c. syringe, and injected the mixture. His pulse improved while the needle was still in the vein, respirations slowly returned to normal, and he regained consciousness. By the next day, he was sitting up in bed, joking about his unexpected recovery. Following that, whenever his asthmatic attacks failed to respond to the inhalation of asthma powder, or to epinephrine hypodermically, I would give him another injection of aminophyllin and dextrose, always with gratifying results. He has been completely free of asthma for four months and is gaining in weight and strength.

When using aminophyllin on a patient for the first time, it is best to give only 0.24 gm. in 10 c.c. of distilled water, normal saline, or dextrose solution. The solution should always be injected slowly. In patients who have become adrenalin-fast, aminophyllin seemed to restore activity to the epinephrine.

A Comparative Value of Antisyphilitic Drugs and the Problem of the Wassermann-fast Patient

(A. B. Cannon, New York City, in *Jl. Med. Asso. of Ga.*, July)

Arsphenamine has proved by all tests to be far superior in therapeutic efficacy to either neo- or silver arsphenamine. It has also shown itself to yield a lower percentage of relapses and a higher percentage of satisfactory final outcomes, and to be less productive of untoward reactions

Most "Wassermann-fast" cases are actually Wassermann-resistant ones, which have resulted from insufficient treatment and the use of inadequate drugs, rather than from the existance of any focus of infection.

True Wassermann-fastness should be treated vigorously in the young patient. but in the case of the elderly syphilitic efforts should be directed rather totward keeping him as comfortable as possible for the remaininig years of his life than toward the establishing of a complete cure.

Ergotamine tartrate is the most useful drug for relieving the attack of migraine. I should not be often repeated.

Doctors who are keen to do research work usually expect others to do the work,—*Recorder Columbia* (S. C.) *Med. Soc.*

HUMAN BEHAVIOR

James K. Hall, M.D., *Editor*, Richmond, Va.

Significant

In the *Journal of the American Medical Association* of July 29th, Dr. C. Charles Burlingame writes about: Hard Facts about Psychiatry. Dr. Burlingame is Psychiatrist-in-Chief to the Neuro-Psychiatric Institute at Hartford, in the State of Connecticut. His title is long, and so is the name of his institution. But he is a gifted man; he has had much experience with folks sick in their minds, and in hospital administration. Dr. Burlingame knows a great deal about mental sickness, about the literature and the history of psychiatry, and he knows how to verbalize himself. He is not an old man, yet modern psychiatry, with its new words and its great enthusiasm, has come into being during his professional life. Dr. Burlingame has felt the tremors caused by the influences of the newer psychiatric theories; but he has not been engulfed. Always he has been able to keep his head above the waves and his feet upon the firm ground.

Dr. Burlingame e presses regret that sickness is so often spoken of as of the body at one time and of the mind at another time. He thinks a mortal is not cleavable into part body and part mind, but that mind and matter interpenetrate. It is scarcely probable that the body is sick and the mind well, or that the sick mind is likely to be surrounded by a well body. When the physical organs are in disorder the psyche is apt not to be doing its best, and, conversely, when the mind is morbid ,the functions of the organs are likely to share in the morbidity. The individual is an entity. It must be so, or he could not be an individual.

And in *The Journal* of June 24th, Dr. John D. Campbell, of New York, writes about Psychiatry and General Practice. Dr. Campbell thinks of himself as a general practitioner who has developed sufficinet understanding of some of the problems of psychiatry to enable him to deal with most of the psychic manifestations of disease as he encounters them in his daily work. He criticises some psychiatrists for presuming to pedestalize themselves and to discourage general practitioners from assuming that they can grasp enough psychiatry to fit them to deal confidently with mentally sick folks. Dr. Campbell believes that most family physicians have as much innate capacity as most psychiatrists, and that they can enable themselves to understand the symptomatology of mental sickness and to deal with the psychic manifestations as confidentally as with the somatic disorders.

It is well enough to know words—what they mean, how to use them and when not to use them. Technical words have their proper uses. Their use tends to beget accuracy and conciseness of expression. It is easier to put down the chemical formula for water than to write out in words the structure of the water molecule. But most of the manifestations of mental disease can be described by using words the meanings of which are known to most literates. I fear that Dr. Campbell believes psychiatrists are chiefly responsible for the lack of interest of doctors in general in affections of the mind. He believes psychiatrists make use of too-big words; that they coin words, which frequently cannot be found in the dictionaries; and a few psychiatrists must assume—mistakenly to be sure—that the problem is lightened and the darkness illuminated merely by calling an old obscure condition by a new name. We comprehend dementia praecox no better, for example, since we have been referring to it as schizophrenia.

The short word, death, is even more impressive, and quite as accurate as the ponderous term, permanent suspension of animation.

I hope the *Journal of the American Medical Association* will publish in simple language more pieces dealing with dysfunction of the immaterial attributes—sickness of the mind, if you will. Many a psychiatrist could easily do it if he could only forget for the moment that he is a psychiatrist.

If psychiatrists would only dip into their professional experiences and relate them as if they were addressing themselves to non-medical readers of average vocabularies a new form of medical literature would have been formed. Doctors would then begin to say one to another that finding out about patients' minds is even more interesting than finding out about their bodies. But, many general practitioners are splendid psychiatrists—without being technically conscious of it. They are conscious of their power, but they do not understand the origin of it. They live in their patients' bosoms and they know wherefore their patients do many things.

Still Marker

A marker has just been erected and unveiled with exercises at Jonesville, Lee County Virginia, at the birth-place of Andrew Taylor Still. He was born there in 1828, and he became the founder of osteopathy, and he lived until 1917.

Dr. Still, as he came to be known, was the son of a Methodist minister, who took his family to Tennessee early in his ministerial life, and later

to Missouri. There the founder of osteopathy reached manhood and married. He moved to Kansas, became associated with John Brown in his abolitionistic activities, served as an officer in the Union Army during the Civil War and was later a member of the territorial legislature of Kansas. Soon after the close of the war he experienced distress by observing the suffering of alcholics and drug addicts. And during the last year of the war he lost three of his own children who died from an epidemic of cerebro-spinal meningitis. He brooded over those tragedies until his mind evolved the doctrine that there existed in the human body all the factors necessary for its health. On the basis of the belief he built the philosophy of osteopathy and at Kirksville, Missouri he founded in the nineties the American School of Osteopathy. There he spent the remainder of his life in operating that school, in practising osteopathy and in edition *The Journal of Osteopathy*.

A Suggestion to Easy-Mark Doctors

"John, we've been friends a long time, I am going to ask a favor of you. President Edwards of the First National Bank says if you will endorse my note for $500.00 he will lend me the money."

"Now, Henry, I certainly do appreciate the bank's confidence in me; but that's not just the point. The president of the bank is no friend of yours, or he would have lent you the money right away, and I don't want any friend of mine to be under obligation to a man who is not his friend. You just take that note down and get Sam Edwards to endorse it and I'll lend you the money. Then you will be under obligation to your friend, only, and that will be another matter entirely."

DENTISTRY

J. H. Guion, D.D.S., *Editor,* Charlotte, N. C.

How Many Teeth May Be Removed at One Sitting

This subject concerns both physician and dentist. The better it is understood the less the chance for embarrassment growing out of contrary opinions given the patient or parent.

It has not been long since no dentist would remove more that two or three teeth at one visit, however favorable the condition of the patient. Now it is generally agreed that it is often best to remove all infected teeth at one operation rather than submit the patient to the mental strain of several operations and the dread of anticipation in the intervals. Sometimes this dread takes such a hold, that the patient can not be induced to return.

With improvements in local anesthetic agents and techniques and the help of the barbiturates few extraction operations require general anesthesia. Age and health of the patient are to be given due consideration.

As a rule the history will give information on which the dentist can decide properly whether it is advisable to have the patient go to his physician for an examination before having the extraction.

The condition of the mouth is to be considered in deciding on extracting teeth. Inflammation of gums and alveolar processes—x-ray examinations to be made in many cases—may make it highly inadvisable to do any oral surgery until the inflammation has been brought under control.

Postoperative pain may be prevented to a great degree by removing all jagged points of bone. All ragged tissue projections should be clipped off to lessen after-bleeding, and last but not least a determined effort should be made to have the patient continue to brush the teeth and keep the mouth and remaining teeth clean to avoid Vincent's infection that can easily develop.

Domestic Water and Dental Caries

(Edi. in *Jl. of Med.*, Aug.)

Galesburg and Monmouth, Ill., using a domestic water supply from 2400-foot deep wells show 201 and 205 decayed permanent teeth per 100 children, respectively. Macomb and Quincy, Ill., using a domestic water from nearby rivers have dental caries rates of 401 and 633, respectively.

It seems reasonable "to associate the low dental caries rates with higher fluoride content of the water supplies."

The Treatment of Acute Barbiturate Poisoning

(P. G Volpitto, Augusta, Ga., in *Anes. & Analg.*, July-Aug.)

The treatment should include the establishment of an adequate airway, artificial respiration if indicated, gastric lavage, elimination of the drug by proper purgation and diuresis, support of circulation and nutrition, maintenance of body temperature and special nursing.

Pictrotoxin and metrazol are of value, the former having a greater range of use. Either may prove deterimental if overdone. Coramin is of no value.

The empiric use of antidepressant agents is to be condemned.

Pitfalls in X-ray Diagnosis

(L. M. Hilt, Grand Rapids, Mich., in *Ill. Med. Jl.*, July)

Cases cited are: Mistaking empyema for metastasis, hemothorax for pneumonia, non-cancerous tumors of the stomach for stomach cancer and duodenal ulcer, an esophagus filled with blood for an aneurysm; failure to diagnose a case of lymphosarcoma of the stomach; mistaking chronic osteomyelitis for bone sarcoma.

The Control of Gastric Hyperacidity by Magnesium Trisilicate

(Graham Reid, Charlotte, N. C., in *Am. Jl. Digest Dis.*, June)

Magnesium trisilicate is a satisfactory substitute for the alkalies commonly employed to control gastric hyperacidity; in the same dosage it is slightly less prompt in its neutralizing action. Its chief advantages over the alkalies are: it has a more prolonged neutralizing action; it has no effect on the bowels; and it is non-absorbable, and so can not cause alkalosis.

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHEN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

FRANCOIS RABELAIS

(1495-1553)

RABELAIS was the most learned Frenchman of his time. There was nothing then known in medicine that he did not know. He combined his immense mental ability and knowledge of medicine with the insight of a good psychologist and thus approached more than any other man in the Middle Ages an enlightened rationalism of modern medicine and psychology.

He was antedating by several centuries our modern psychologists who are waging a war against repression and allowing natural and unhampered devolopment.

The fact that it was dangerous for a man to introduce advanced ideas made it necessary for Rabelais to introduce them through the medium of a clown in gross and exaggerated stories. His extreme vulgarity may be explained, in part, by his desire to entertain the ordinary people, but it is difficult to explain or excuse his obscene and vulgar language. Fortunately he is read only by scholars. To the ordinary Frenchman Rabelais is just as difficult to read as Chaucer is to the average Englishman. In the English editions a lot of the vulgarity is expurgated, and there are hundreds of these vulgarities that are not even understood by scholars.

Very little is known of Rabelais' early life. He was born at Chinon in the province of Touraine but the exact date of his birth is unknown. The first definite knowledge we have of him is his entrance into the Franciscan monastery of Fontenay le Comte in the year 1519. Here he became disgusted with what he considered the ignorance of his associates and because of his interest in the " new learning" and his own brilliance he was generally disliked and mistreated. He made fun of their methods of worship and it is said that on one occasion when the people came to the convent church to address their prayers and make their offerings to the image of St. Francis, Rabelais, in order to ridicule their superstitions, removed the image of the saint, disguised himself and stood in the place of the image. But he became too much amused at their worship of himself and laughed out loud and moved. Whereupon they cried out: "A miracle! my good Lord St. Francis moves." He was seized and whipped upon his bare back with knotted cords. He left the Franciscan monastery and became a Benedictine monk and finally a secular priest.

On September 17th, 1530, Rabelais entered the medical school of the University of Montpellier. Owing to his great knowledge and also because he had probably already studied medicine in the University of Paris, he was given the bachelor's degree in medicine November the first of the same year. In 1531 he gave public lectures on Galen and Hippocrates. In 1532 he moved from Montpellier to Lyons to practice medicine. Soon he was appointed physician to the Hotel Dieu and taught anatomy, using human subjects for demonstration. In the same year he edited the medical Epistles of Giovanni Monardi; the Aphorisms of Hippocrates; and the Ars Parva of Galen.

In 1535 Rabelais was dismissed from Lyons hospital for having absented himself twice without permission. He returned to Montpellier and was awarded the M. D. degree by that institution in 1537 and became lecturer on medicine. His contemporaries considered him the greatest doctor of the day and described him as the "honour and glory of the healing art" and he was addressed as "Rabelais, the most skillful physician."

But, notwithstanding his eminence as a physician, he is best known today for

his literary productions. Rabelais' most important literary works are Gargantua and Pantagruel.

In Gargantua he describes the birth of the hero, a giant and the son of giant parents. He describes the feast and makes a burlesque of the eating and drinking, going to such extremes as having the hero, as soon as he was born, calling out in a high, sturdy and big voice for "some drink, some drink, some drink."

In the story he sharply criticises the schools and convents of the Middle Ages and gives his idea of a model convent—to be sure the opposite of the one he attended.

In Pantagruel Rabelais introduces the principal hero, Pantagruel, the son of Gargantua. He has his hero go to school in Paris and there Pantagruel meets Panurge, the best character drawing of Rabelais.

Panurge is very intellectual but totally devoid of morals. The chief romance of his book centers around Panurge's marriage. The book is humorous and shows sympathy for all human affairs. As Pantagruel wanders to all parts of the imaginary world, finally, at the Abbeye of Theleme he finds the solution of all problems of human nature solved by this decree of a physician and psychologist: "Fais ce que tu vouldras" (Do what you wish); for, continues he, "People of free and goodly birth, well brought up, have by nature an instinct and pride, which withdraws them from vice and impels them to virtue."

SIR THOMAS BROWNE

(1605-1682)

Dr. Browne, one of the world's greatest writers of prose, was born in London, October 19th, 1605. His father was a wealthy merchant and young Browne had the best educational advantages. He first attended Winchester and then in 1623 entered Pembroke College, Oxford, from which he was graduated in 1627 with the B. A. degree, and in 1629 with the M. A. degree. He chose medicine as his profession and began the study at Montpellier, continued at Padua, and then at Leyden where he received the M. D. degree in 1633. He began practice at Shipley Hall near Halifax. After a few years he moved to Norwich where he practiced medicine the rest of his life. In 1637, one year after moving to Norwich, he was awarded the M. D. degree by Oxford University.

Dr. Browne was one of the most distinguished physicians of his time but his fame today rests upon his literary works. His Religio Medici is one of the greatest pieces of literature of all time. It was the first serious attempt to reconcile religion and science. This learned physician wrote Religio Medici primarily as a defense of physicians against the charge of being irreligious and as a statement of his own beliefs. It cannot be read hastily and should be read and re-read. Bacon said that some books are to be tasted, others to be swallowed, and some few to be chewed and digested. Religio Medici is one that should be chewed and digested. It was probably written in 1635 while Browne was practicing medicine at Shipley Hall. Dr. Browne said that it was not written for publication but "for my private exercise and satisfaction, I had at leisurable hours composed." However, an unauthorized edition appeared in 1642. Dr. Browne claimed that this edition, which attracted much attention, was not exactly as he had written it, but had been altered in many ways—additions, omissions and transpositions. He therefore had published in 1643 an authorized edition. In this work he gives his beliefs as a man dedicated to science, one trained in analysis and inquiry, and yet finds no conflict between his scientific credo and religion. The book opens with a confession of faith. He boldly styles himself a Christian and says that he is not one because of his education, or the clime wherein he was born, or from principles instilled in him by his parents "but having in my riper years and confirmed judgement seen and examined all, I find myself obliged by the Principles of Grace, and the Law of mine own Reason, to embrace no other Name but this." He says "I am of that Reformed new-cast Religion, ... of the same belief our Saviour taught, the Apostles

disseminated, the Fathers authorized, and the Martyrs confirmed." He says there are two books from whence he collects his divinity, one written of God and the other nature, "that universal and public manuscript, that lies expanded unto the eyes of all: that those that never saw Him in the one, have discovered Him in the other." Then follows his argument for the reconciliation of science and religion. He ends with this prayer:

"Bless me in this life with but peace of my conscience, command of my affections, the love of Thy self and my dearest friends, I shall be happy enough to pity Caesar. These are, O Lord, the humble desires of my most reasonable ambition, and all I dare call happiness on earth; wherein I set no rule or limit to Thy Hand or Providence. Dispose of me according to the wisdom of Thy pleasure: Thy will be done, though in my own undoing."

Other works by Browne are: The Enquiry into Vulgar Errors which is also known as Pseudodoxia Epidemica was published in 1646. In this he discusses the source of common errors and attributes them largely to the frailty of human nature, to the weak judgment of people, to the practice of taking things to be true without undertaking to find out the facts, to too great confidence in authority, and finally to Satan.

Hydriotaphia or Urn Burial, or a Discourse of the Sepulchral Urns Lately Found in Norfolk, published in 1658, is a philosophical discourse on burial customs of various countries in various ages. The interest in the urns found in Norfolk is subordinated to the interest in "life, death, and immortality." In "The Epistle Dedicatory" to Urn Burial, Dr. Browne, explaining his interest in the subject, says:

"Beside, to preserve the living, and make the dead to live, to keep men out of their urns, and discourse of humane fragments in them, is not impertinent unto our profession; whose study is life and death, who daily behold examples of mortality, and of all men least need artificial mementoes, or coffins by our bedside, to minde us of our graves."

Garden of Cyrus was published also in 1658. It discusses gardens of antiquity, and shows the author's knowledge of a great number of plants—it is almost a study in botany.

A Letter to a Friend, and Christian Morals are short tracts which usually appear in the same volume with Religio Medici.

In 1664 Dr. Browne was elected Honorary Fellow of the College of Physicians and was knighted by Charles II in 1671. He died at Norwich, October 19th, 1682.

FRIEDRICH SCHILLER

(1759-1805)

Than Johann Christoph Friedrich von Schiller, a nobler practitioner of Medicine never lived. By this I do not mean that he was a great doctor or a great surgeon—for he was not. Like his father, who was once an army surgeon, his interests soon developed in other directions. He first studied law at The Solitude, an institution near Ludwigsburg, but he never liked the study of law and when, about 1775, the school moved to Stuttgart and added a department of medicine, Schiller entered the school of medicine and received his degree in 1780. He rebelled against the strict military discipline of the school and this probably accounts for his writing his first drama, The Robbers. As soon as he completed his medical education he was appointed surgeon in the Würtemberg army. However, his interests soon turned to literature and his place in history rests upon his writings rather than upon his medical accomplishments, and he became one of the world's greatest dramatists and incontestibly the most popular and best loved of the poets of the German people.

The distinguished literary historian, Wilhelm Sherer, thus epitomizes Schiller's life: "After studying medicine he was appointed regimental surgeon, but by this time his whole thoughts were really absorbed by literary interests. He published his drama, The Robbers, and fled from Stuttgart to Mannheim. After this he went

through many vicissitudes, often finding himself in great want. But his poetic talent rushed on, and the public loudly applauded him and he found enthusiastic friends. He long strove in vain to gain a firm footing anywhere, nor did he ever attain a large share of the world's good things. The Duke of Weimar gave him a small professorship in Jena and later on Schiller led a meager existence in Weimar. To add to his troubles, soon after his migration to Weimar, his health began to fail." At the early age of forty-five, he died in the bare, meanly-furnished room of a yellow unpretentious house in Weimar, where the visitor stands with reverence and pity by the plain bed where he breathed his last in 1805.

"But fate granted him three great gifts: the friendship of Goethe, the unfailing love of his noble wife, Charlotte von Lengenfeld, and what was still more than happiness in friendship and marriage—inextinguishable nobility of soul. Though he had to wait long and pass through many trials and struggles before a ray of happiness brightened his lot, yet there remained something in his soul untouched by all his troubles, something which could soar above them."

A summary of his career is appropriately expressed in these words which may be read in his Wallenstein:

> "His life was perfect and complete,
> He made reality seem like a dream,
> And round the common show of earthly things
> He threw the golden halo of the dawn."

He wrote The Robbers while a medical student at Stuttgart, but did not publish it until after he became an army surgeon. It appeared in July, 1781, as an anonymous piece of literature with preface stating that the work was probably unsuited for the stage but that the author thought it would be a moral contribution to literature. Nevertheless it was played the first time in 1782, but the producer thought best to revise certain parts of it and to put the scene back to the sixteenth instead of the eighteenth century. It was enthusiastically received. It is an immature but a very strong play. The whole thing is a story like the Prodigal Son and his brother. There are two brothers, the younger of whom is very much like the Prodigal Son. He is captivating, popular and a spendthrift. On the other hand the older brother is jealous of the younger brother and by means of intrigue has him disinherited by his father and in despair the younger becomes a robber, joins the robber bands and in the end is arrested for robbery and murder; and yet Schiller so describes the older brother that the reader of the play hates him and feels that justice is served when he, together with the younger brother, dies.

Schiller's most popular and best work is Wilhelm Tell. Tell was a Swiss and was absolutely true to his people, to his country, and to his own family. He was patriotic in the highest sense. He was the best archer and the best boatman and sailor in Switzerland and always held himself ready to protect and defend his fellow Swiss against their enemies; but to the enemies of his country he was implacable and vengeful. He was successful in destroying the enemies of Switzerland and winning the freedom of his people.

Wallenstein is perhaps his next best work. Wallenstein, a great soldier of fortune in the Thirty-years War, who at the time of the crisis joined the forces of the Emperor and fought his battles with great success, he was a man of great resource as a general, a man of great riches, yet turned false to the Emperor on whose side he fought. He fell under the Emperor's suspicion, was waylaid in his own castle and killed by the hired murderers of the Emperor.

In Mary Stuart, Schiller throws all of our feelings on the side of Mary and makes her the innocent victim of the intrigues of others, and makes Elizabeth the proud, vengeful and cruel enemy taking advantage of Mary's helplessness to imprison and behead her.

Other works by Schiller: Maid of Orleans, Bride of Messina, Don Carlos, History of the Thirty-years War, History of the Downfall of the Netherlands, and an Essay on Aesthetics.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D. ..... Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP ..... Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. ..... Charlotte, N. C.

Dentistry

J. H. GUION, D. D. S. ..... Charlotte, N. C.

Urology

HAMILTON W. McKAY, M.D.
ROBERT W. McKAY, M.D. ..... Charlotte, N. C.

Internal Medicine

GEORGE R. WILKINSON, M. D. ..... Greenville, S. C.

Surgery

GEO. H. BUNCH, M.D. ..... Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D. ..... Danville, Va.
IVAN M. PROCTER, M.D. ..... Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D. ..... Richmond, Va.
G. CARLYLE COOKE, M.D. ..... Winston-Salem, N. C.

Pediatrics

G. W. KUTSCHER, JR., M.D. ..... Asheville, N. C.

General Practice

WINGATE M. JOHNSON, M.D. ..... Winston-Salem, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D.
R. P. MOREHEAD, B.S., M.A., M.D. ..... Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D. ..... Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D. ..... Greensboro, N. C.

Public Health

N. THOS. ENNETT, M.D. ..... Greenville, N. C.

Radiology

ALLEN BARKER, M.D.
WRIGHT CLARKSON, M.D. ..... Petersburg, Va.

Therapeutics

J. F. NASH, M.D. ..... Saint Pauls, N. C.

Tuberculosis

P. P. McCAIN, M.D. ..... Sanatorium, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

LET'S REDOUBLE OUR EFFORTS IN PREVENTIVE MEDICINE AND SURGERY

IT is said that a doctor in a mid-western town made a fortune and a great name by being ready when a call came to a railroad wreck nearby. He had kept two bags packed with the drugs, instruments and other paraphernalia needed for rendering the treatment demanded *right now* by the victims of violence. All he had to do was pick up his bags and drive to the scene.

Since that time, with hard-surface roads everywhere and every undertaker operating an ambuance ready to scream its way to the scene to grab a corpse or to *rush* a survivor to a hospital, the opportunity of the ready man is less. But it is still existent, very much so.

Most of us have heard of the farmer telling the agent who solicited a subscription to a farm journal: "I don't need it, I don't farm half as well as I know how to farm now." Most of us know how to do a whole lot better than we do. It is not so much lack of sense as failure to use the sense we have that accounts for poor medical practice.

Under the pia mater of John Public has been implanted the idea that the thing to do in case of illness or accident is to *rush* the victim to a hospital in an ambulance, that nothing else is of any avail. Within the past few weeks in North Carolina, two men, almost certainly, and one child, very probably, because of this obsession, lost their lives.

In Charlotte a young couple had started out to take their infant child for an automobile ride. The child fell from its mother's arms. Although his own automobile was ready and at the door, the father, under the influence of the teaching of daily papers, ran about calling for some one to "get an ambulance." When the ambulance was got to the baby and the baby got to the hospital it was too late to save the child's life.

A citizen of a Western Carolina county and a police officer in Robeson were shot, each having an artery of the thigh severed, and each bled to death while being *rushed* to a hospital. Any cross-roads doctor, any boy scout, or any body else with a little instruction and the least bit of presence of mind could have saved the lives of these two men.

Some doctors will say, to themselves if to no others: We pay county and city health officers, school nurses *et cetera* to instruct in life preservation. But it is plain, as it has always been plain, that the great bulk of public health work—*i. e.*, preventive medicine and surgery—must be done by practitioners of private medicine.

This journal urges doctors who pay $25.00 a year

for the privilege of praticing medicine and surgery, to, either on their individual initiative or through their county societies, get before meetings of Rotarians and Lions, Masons and Knights of Columbus, Legionnaires and Ku Klukers, Sunday School Scholars and Family Picnicers, Farmers Alliancers and W. P. Aers,—and particularly the pupils in the day schools—and instruct them all (1) how easy it is to stop bleeding by holding a thumb firmly on the bleeding point, or applying a tight bandage to thigh or arm; (2) that after most accidents on the foot-ball field, on the highway, or from violence in general, a minimum of movement, straightening the neck to allow breathing, pressure to stop bleeding and *getting a doctor to the patient where he is* is the best program; (3) that diving in shallow pools will break their necks and that just as good swimming may be had in water five feet deep as in water fifty feet deep; (4) that excessive exposure to sun's rays is not only silly and blistering but dangerous; (5) *all that we know* about protectve inoculations and reinoculations; (6) all that we *know* about the early diagnosis and cure of cancer; (7) that it is dangerous to take a purgative when one has a pain in the belly; (8) that most headache remedies may do a whole lot of harm; and (9) a lot of other things that will occur to the doctor doing the instructing.

This is not only good medicine and good humanitarianism: it is, in addition, good medical economics.

Wake Forest to Have Complete School of Medicine

The papers of August 5th, carried the welcome intelligence that, through the beneficence of the late Bowman Gray, of Winston-Salem, Wake Forest College is to have complete School of Medicine.

Medical educators seem to be agreed that North Carolina needs more provision for giving the last two years of the Medical Course, and everybody agrees that such provision is tremendously costly. President Kitchin's announcement that funds have been provided ample for construction and manitenance is indeed good news.

The enlarged school which will give all four years of its curriculum at Winston-Salem, is not to be ready to receive students before 1941.

This journal extends hearty congratulations to Wake Forest College and to the city of Winston-Salem, even heartier congratulations to North Carolina's medical profession, very heartiest congratulations to the general population of the State; and it offers only two suggestions: first, that every full professor in the clinical subjects be a doctor actively engaged in the private practice of medicine; second, that the dean be a general practitioner.

Heart Pain: Dr. Ivan P. Battle to Dr. W. B. Kinlaw*

Pain in the chest that is associated in the mind of the patient with the heart is different from any other pain the human being is subject to. Whether the pain is caused by any condition of the heart or not, if it is associated in the mind of the patient with the heart there is a fear and a feeling of dissolution that makes cowards of those who would not be considered cowards; those who might face danger from other causes with a degree of calmness. That this fear and sensation of approaching death is not merely due to the origin of the pain is proven by the fact that pain of cardiac origin when referred to the upper abdomen may be regarded by the patient as a trivial matter needing only a dose of bicarbonate of soda for relief.

It is my belief that the pain primarily produces fear and the fear both increases the pain and lessens the tolerance for this particular pain. That there are many pains complained of in the region of the heart that have no demonstrable basis so far as the heart is concerned is generally recognized. However, unless such a patient can be reassured and some plausible reason given for the pain the patient will suffer far out of proportion to the actual pain.

Pain being an interpretation of a sensation, we have only the patient's word for its intensity. Its location may be entirely misleading; children with apical pneumonia more often than not complain of abdominal pain. The pain of kidney colic instead of the classical may be referred to the upper abdomen. When we can not tell whether the pain of toothache is from an upper or lower molar it is not surprising that we misinterpret the pain of the viscera.

I have suffered from attacks of pain in the chest. Whether it is true angina (whatever angina is) or pseudo angina makes but little difference to me, at the time of occurrence. The fear associated with the severe attacks is hard to express. It probably would be claimed as the unconscious effort of self preservation that we have handed down to us through the centuries. It carries with it none of the feeling of approaching melancholia that one has when contemplating the possibility of hopeless invalidism. Furthermore, once the intense pain is gone, the fear also is gone and it seems to

*J. P. Battle died of coronary artery disease about a year later.

NEWS

Buncombe County Medical Society

The twelfth meeting of the year was called to order by President Griffin, 8 p. m., July 10th, at the City Hall, 62 members present. Many visitors introduced by Drs. C. H. Cocke, Richardson and Blumberg, and President Griffin.

Dr. Ward, reporting for the committee on P. H. & L. stated that he had been unable to meet with the City and County Commissioners due to conflicts in dates; his committee would continue to endeavor to meet with the commissioners.

A letter from Senator Bailey relative to the proposed amendment to the Wagner Bill HR-6535 was read. Dr. Webb Griffith was then called upon to explain the purpose of this amendment.

Dr. C. H. Cocke then introduced the speaker of the evening Dr. David T. Smith, Associate Professor of Medicine at Duke University, who spoke on The Harmful Effects of Routine Treatment for Tuberculosis When Applied to Non-Tuberculous Conditions Simulating Tuberculosis, augmented by many excellent slides of x-ray films.

Dr. Ringer then thanked the speaker for his delightful talk. President Griffin added his word of appreciation.

Dr. Richardson urged the members of the Society to attend the Tuberculosis Seminar at their convenience. Dr. Schaffle, then made a brief announcement relative to the Tuberculosis Seminar.

Dr. Kutscher announced for Dr. Huffines, chairman, the Blind Bogy and Handicap Golf Tournament for the members of the B. C. M. S. and visiting physicians on August 21st. The tournament to be followed by a banquet and regular meeting of the Society. It was moved seconded and passed that the sum of $15 be granted the committee for the purchase of a prize for this tournament. Full details of the tournament will be carried in the August issue of *The Bulletin*.

President Griffin announced the program for the next meeting to be held July 31st.

—G. W. KUTSCHER, JR., Secretary.

At the recent annual meeting of the Grayson-Carroll (Va.) Medical Society officers were elected to serve the coming year as follows: Dr. Alex N. Chaffin, Galax, president; Dr. Glenn Ward Phipps, Independence, vice president; Dr. M. T. Rosser, Hillsville, secretary and treasurer. The following program committee was named: Dr. Glenn Ward Phipps, Independence, chairman; Dr. M. T. Rosser, Hillsville, and Dr. Virgil J. Cox, Galax.

The Mecklenburg County (N. C.) Medical Society held its annual picnic at Dr. L. W. Hovis' lodge on the Catawba River June 20th.

A group of friends and former patients of Dr. LeGrand Guerry, Columbia, have presented a bronze bust of Dr. Guerry to the Columbia Hosptal. The unveiling ceremonies were held in the lobby of the hospital June 1st.

Dr. C. H. Whitehead, Health Officer of Catawba County, N. C., since the creation of the office last summer, has resigned to accept the appointment as resident physician in a hospital in Philadelphia.

Dr. Hugh A. McAllister has been elected to the staff of Baker Sanatorium, Lumberton, and will begin the general practice of medicine in Lumberton shortly.

Dr. Lansing Norment, a native of Robeson, has returned from Tulane, and has been elected house physician at Baker Sanatorium.

Dr. Frederick R. Taylor, High Point, has been elected to alumni membership in the Haverford College chapter of Phi Beta Kappa.

Dr. J. Gordon Rennie, of Petersburg Va., recently connected with St. Luke's Hospital, Bluefield, W. Va., is now surgeon to the John Russell Hospital, Bedford, Va. Dr. J. G. Jantz, who has been surgeon there for the past three years, will now return to Kansas. Dr. Rennie has studied at Johns Hopkins and done resident work at Jefferson Hospital, Roanoke; Union Memorial Hospital, Baltimore, and Presbyterian Hospital, New York.

Dr. Laurie R. Teasdale announces to the profession that he has opened offices at 117 West Seventh Street, Charlotte, N. C., for the practice of Otolaryngology and Peroral Endoscopy.

Dr. A. L. Herring, Richmond, announces the association of Dr. Fitzgerald Cavedo, in the practice of medicine, surgery and obstetrics.

Dr. John Horart Reed has returned with his family to his work as a medical missionary in China after having spent a year on leave at his former home in Richmond.

Dr. Joseph A. Elliott, Charlotte, announces that Dr. David G. Welton, formerly Instructor in Dermatology, University of Michigan Medical School, is now associated with him in the practice of Dermatology and Syphilology.

ELIXIR

DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

[illegible] to any physician in the U. S. on request

Dr. Wesley G. Byerly has been appointed health officer for the district composed of Caldwell and Burke Counties, in succession to Dr. W. D. Carter, who will continue his work with the State Board of Health. Dr. Byerly, a graduate of the Medical College of Virginia and a native of Davie County, has had experience in general practice, in tuberculosis work, in the State Sanatorium near Aberdeen, and in the South Carolina Sanatorium at Columbia. For the past few years he has been physician at a C. C. C. Camp, with his home in Statesville. His headquarters for the next two years will be at Lenoir.

MARRIED

Miss Alice Hobson Haynes, of Washington, and Lieutenant Francis Peterson Wells, Medical Corps, U. S. A., were married July 1st, in St. John's Chapel of the Washington Cathedral.

Dr Richard Lawrence More and Miss Frances Riley Jordan, of Halifax, Virginia, were married June 27th. Dr. Moore, formerly of Lynchburg, is engaged in the practice of surgery in New York City.

Dr. D. Forest Moore, of Shelby, and Miss Eleanor Lyon, of Terrell, North Carolina, were married on July 26th.

Dr. Robert Monroe McMillan, of Candor, North Carolina, and Miss Dorothy Burchfield, of Danville, Pennsylvania, were married on July 12th.

Dr. William Curtis Stifler, Jr., of Baltimore, and Miss Jean Evans Rose, of Chapel Hill, were married on July 29th.

Announcement has been made of the marriage of Dr. John Daniel Call, of Richmond, and Miss Alice Elizabeth La Plant, of Seattle, on March 29th. Dr. Call is the son of the late Dr. Manfred Call. He is serving an internship in Seattle.

Dr. Charles F. Owen, Jr., Canton, N. C., and Miss Eloise Harnden, of Philadelphia,, were married July 10th, 1939. Mrs. Owen, a technician, received her training at, and subsequently serving on the staff of, the Episcopal Hospital in Philadelphia. Dr. Owen was graduated from Wake Forest College in 1934, from the University of Pennsylvania in 1937, and served as Interne at Philadelphia General Hospital until July 1939. Dr. Owen is now practicing in Canton, North Carolina.

Dr. William Louis McLeod and Miss Margaret Bland, of Buie's Creek, were married on July 15th.

DEATHS

Dr. Herbert Mann, Richmond, chief surgeon for the Virginia State Penitentiary, died July 7th noon at a local hospital after an illness of several weeks.

Major-General Walter D. McCaw, retired, (Medical College of Va., 1882) former Assistant Surgeon-General of the Army, and Chief Surgeon of the American Expeditionary Force, died July 7th, at a hospital in Kingston, N. Y., after a long illness. He was 78 years old.

General McCaw was the son of the late Dr. James B. McCaw, for many years Dean of the Medical College of Virginia, to be succeeded in that office by his (Dr. J. B. McCaw's) so-in-law, Dr. Christopher Tompkins. Among General McCaw's survivors is a nephew, Dr. McCaw Tompkins, of Richmond.

Dr. James Bryant Person, 66, died at Johnston County (N. C.) Hospital July 16th. Dr. Person was graduated from the Medical College of Virginia in 1897, and had practiced general medicine at Selma for 40 years.

Dr. R. W. Bennett, 64, died July 13th, at his home at Gretna, Va., where he had practiced medicine for 39 years.

Dr. R. H. McLean died at his home in Lillington on July 14th, at the age of eighty-seven. He was the oldest physician in Harnett County, in which he had practised medicine for almost sixty years.

Dr. A. E. Booth died at his home in Mound City, Kansas, on July 21st. He was a North Carolinian by birth and he once lived in Iredell County.

Dr. Henry Fletcher Long died at his home in Statesville at the age of 70 on July 28th. He was a pioneer surgeon in that portion of the state.

Dr. Thomas Sampson Royster died suddenly at his home in Henderson on August 1st of a cardiac disease. He was born in 1890, was graduated from the School of Medicine of the University of Pennsylvania in 1916, and he had been specializing for several years in the practice of surgery.

DOSAGE: 2 teaspoonfuls with a glass of water once or twice daily.

SUPPLIED: On prescription, in 4, 8 and 16 oz. containers.

Betakar

The PHYSIOLOGIC LAXATIVE

Selected granules of gum karaya—vitamin B complex in a special coating—that's BETAKAR!

Swelling into a gelatinous mass in the intestines, gum karaya promotes a rhythmic peristalsis by smooth distention. The B complex has recognized value in overcoming intestinal atony.

Indicated in simple constipation, this strictly physiologic laxative has no harsh irritants nor motivating drugs.

Write for clinical sample.

ENDO PRODUCTS, Inc.

395 FOURTH AVE. NEW YORK

DR. JOHN S. MCKEE, for many years city physician of Raleigh, and the friend of the sick and unfortunate, was given an engraved pocket watch by the city employes on his sixty-first birthday anniversary on July 16th.

Dr. Joseph H. Saunders of Williamston, N. C., died August 3rd, at St. Elizabeth Hospital, Richmond where he had been since July 4th. Death resulted from complications following an operation.

Dr. J. Beverly DeShazo, 70, for 40 years a practicing physician at Ridgeway, Virginia, died suddenly July 31st of a heart attack while waiting on a patient at his office

Dr. Randolph McCutcheon, formerly a practicing physician of Colonial Heights, Petersburg, Virginia, died of a heart attack, Sept. 27th, at his home at South Charleston, W. Va. He was an alumnus of the University of Richmond, Marshall College, West Virginia, and the Medical College of Virginia.

OUR MEDICAL SCHOOLS

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

Dr. A. Johnson Buist, who, for 30 years, has been Professor of Gynecology and Obstetrics has resigned. The resignation was accepted with regrets by the Board of Trusttees and Dr. Buist was made Professor Emeritus.

Dr. R. B. Taft was made Professor and Head of the Department of Radiology and Electro-Therapy at the June meeting of the Board of Trustees.

Dr. F. A. Hoshall was made Professor of Orthopedics.

MEDICAL COLLEGE OF VIRGINIA

Dr. William B. Porter, Professor of Medicine, attended the annual meeting of the West Virginia Medical Association at White Sulphur Springs, July 10th-12th, speaking before the general sesson, the secton on heart diseases, and the section on internal medicine, and to the West Virginia alumni of the College at a luncheon meeting.

Dr. Clair R. Spealman, Associate in Physiology and Pharmacology, has been granted a leave of absence for the session 1939-40 to do special work in physiology at the Laboratoire Maritime, Concormeau, France. Dr. Paul Larson will substitute for Doctor Spealman. Doctor Larson received the A. B. degree from the University of California in 1930 and Ph. D., from the same university in 1934. He has been Instructor in Physiology at the Georgetown Medical School.

Dr. William B. Porter, Professor of Medicine; Dr. Frank L. Apperly, Professor of Pathology; Dr. Harvey B. Haag, Professor of Pharmacology, and Dr. Rolland J. Main, Assocate Professor of Physiology, assisted in giving the National Board examinations at Duke University, Durham, North Carolina, in June.

Mr. Hans Jelinek has been employed by the College as medical illustrator. Mr. Jelinek has acted as medical illustrator for the Anatomical Institute of Vienna, the Psychiatric and Neurological Clinics and the Neurological Institute of the University of Vienna.

Dr. W. G. Crockett, Professor of Pharmacy, has been awarded the honorary degree of Doctor of Science by Hampden-Sydney College.

Mr. David I. Farnsworth has joined the full-time faculty of the College effective July 1st, 1939, as associate in anatomy. Mr. Farnsworth received the B. A. degree from Nebraska Wesleyan University in 1924, the M. S. degree

from St. Louis University in 1928, and the B. M. degree from Louisiana State University in June.

The American Tobacco Company has continued its grant of $5000.00 for the year 1939-40 for research in the Department of Pharmacology.

BOOKS

PRINCIPLES OF HEMATOLOGY, with 100 illustrative cases, and 155 illustrations including 168 original photomicrographs and 95 original charts and drawings, by Russell L. Haden, M. A., M. D., Chief of the Medical Division of the Cleveland Clinic, Cleveland, O.; formerly Professor of Experimental Medicine in the University of Kansas School of Medicine, Kansas City, Kansas. *Lea and Febiger*, Philadelphia. 1939. $4.50

Added knowledge has, the author says, made this subject needlessly more complex; the valuable laboratory procedures are few and usually easily carried out; clinical hematology is simple once the principles on which blood variations depend are understood.

Then he goes on to prove the truth of these statements by writing a book that makes the subject of hematology thoroughly and easily understandable.

ASAC

ELIXIR ASPIRIN COMPOUND

Contains five grains of Aspirin, two and a half grains of Sodium Bromide and one-half grain Caffeine Hydrobromide to the teaspoonful in stable Elixir. ASAC is used for relief in Rheumatism, Neuralgia, Tonsillitis, Headache and minor pre- and post-operative cases, especially the removal of Tonsils.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

TRAUMA AND INTERNAL DISEASE: A Basis for Medical and Legal Evaluation of the Etiology, Pathology, Clinical Processes, Following Injury, by Frank W. Spicer, A. B., M. D., F. A. C. P. Forty-three illustrations. *J. B. Lippincott Co.*, Philadelphia; London; Montreal. 1939.

Trauma is defined as a single or repeated mechanical injury resulting in contusion, crushing, or laceration. The effects may be local, general, or both. The general practitioner usually sees the injured person first and is in best position to learn the full facts.

There is an excellent chapter on trauma and the brain. False accusations are frequently made in the period of confusion following brain injury. Epilepsy may follow though the skill be not fractured. Spinal cord symptoms do not always correspond with the level of injury as indicated by x-ray examination. Chest injuries require careful examination and prolonged observation. Traumatic pulmonary tuberculosis should be conceded under certain circumstances. A heart strain probably always causes alteration in the texture of heart muscle.

Trauma to the abdomen is gone into very fully, a traumatic duodenal or gastric ulcer accepted as a clinical entity. Symptoms of conditions induced by pancreatic trauma are not characteristic. Appendicitis may be caused by direct or indirect trauma.

The genitourinary tract is subject to a multitude of serious injuries. From trauma to the tract directly, or indirectly through trauma to the spinal cord.

Trauma an embolism, trauma and diabetes, trauma and arthritis, trauma and syphilis, trauma and tumors, electrical injuries—each of these has a chapter.

The authors have compiled a store of valuable information. Many of the opinions expressed will constitute background of authority useful to doctors testifying in court, asked for opinions on very obscure points.

MEDICOLEGAL PHASES OF OCCUPATIONAL DISEASES: An outline of Theory and Practice, by C. O. Sappington, A. B., M. D., Dr. P. H., Consultant, Occupational Diseases and Industrial Hygiene. *Industrial Health Book Company*, Chicago. 1939.

The subject matter includes the causes, cost and prevention of occupational diseases, estimation of disability, occupational disability laws, difference between accidents and diseases, medicolegal evidence, methods of adjudication, the physician as a witness and trends in disability legislation. Appendixes give abstracts of State laws and legal decisions, scheduled diseases, legislative suggestions and a digest of the Workmens Compensation Laws by States.

A book of very useful information, in view of the number and complexity of compensation law cases with which doctors have to deal.

MEDICAL MUSSOLINI, by Morris A. Bealle, Editor of Plain Talk Magazine; H. C. (Carlyle) Lowry, Technical Editor. Published and Distributed by *Columbia Publishing Co.*, 709 Carpenters Building, Washington. 1939. $3.00.

The author says there is much wrong with Medicine and attempts to show that Dr. Morris Fishbein, the Mayo Group, the Rockefeller Foundation, and the Public Health Officers are responsible for these ills. He tells us all about the terrible things that were done to Charles II in his last illness and the repulsive, even nonexistent, medicaments of that time. He goes back to Adam and Eve and tells us that they lived according to the laws of nature and needed no doctor. He tells about the ignorant prejudice against night air; but he does not tell us that this opinion was based on the fact that in with the night air came the mosquitoes. He tells us flatly that the underlying cause of our influenza epidemic of 1918 was war hysteria.

Now he comes to Dr. George H. Simmons and his protegé, Dr. Morris Fishbein, who, he says, "have become more and more a bad odor in the public nostrils" and "so has the prestige of the honest doctor correspondingly suffered." Most readers are familiar with the unsavory record of Simmons. The author tells us that for awhile Fishbein was practically Simmons' office boy, that at the bottom of each of Dr. Fishbein's health articles sold to the Scripps-Howard News Syndicate was a line exhorting the reader "to clip this out and become your own doctor", that the main requirement for procuring the "seal" of the A.M.A. is for the manufacturer of the distributor to "kick in" an acceptable advertising appropriation or an exorbitant sum for a "test" of the product. We are told that " those who 'kick in' can sell adulterated products to their heart's content."

The amebic dysentery epidemic in Chicago in 1933 he calls wholesale murder by the officers of the A.M.A. and the Chicago Board of Health.

The author tells us that Benjamin Rush is reputed by the historians to have said "unless we put medical freedom into the Constitution the time will come when medicine will organize into an undercover dictatorship". Again and again he refers to Dr. Rush's "prophecy" as though he has proof that Dr. Rush made such a statement. A good many of us would appreciate having the proof cited.

There's a whole lot more of it. The Mayos, the Rockefeller Foundation and Dr. Fishbein have, as we all know, been very busy—and none of it suits the author.

The reviewer (the editor of this journal) is far from being an admirer of Dr. Fishbein; he has long considered Simmons and Fishbein as Old Men of the Sea on the back of Medicine; but he wouldn't hang a mangy dog on such preposterous stuff as this book puts forward as evidence.

THE PRINCIPLES OF DENTAL MEDICINE: The Medical Aspects of Dental Disease, by F. W. Broderick, M.R.C.S. (Eng.), L.R.C.P. (Lond.), L.D.S. (Eng.), Hon. Dental Physician to the Royal Victoria and West Hants Hospital; Hon. Dental Surgeon to the National Sanatorium for Diseases of the Chest, Bournemouth; Cartwright Prizeman, Royal College of Surgeons, England, 1926-1931. Third edition, illustrated *The C. V. Mosby Company*, St Louis. 1939. $7.50.

The divorce of dentistry from medicine in England by the Dental Act of 1878 was perhaps justified at the time, but the advance in scientific medicine since that time is showing the disadvantages.

The author believes that dental caries and pyorrhea rest upon a constitutional imbalance in the vegetative system of the body; that the same disturbances that lead to dental caries and pyorrhea cause endocarditis or nephritis, asthma or urticaria, or even glaucoma or dysmenorrhea.

Dental caries is assumed to rest upon a basis of acidosis. In children during active growth a salivary pH of 0.7 and above should mean immunity to dental caries. Work on calcium metabolism has not reached any finality. The vitamins are not regarded as specific substances, nor the hormones: "The action of all these substances becomes clear when viewed from the standpoint of colloidal behavior."

A sufficiency of calcium is essential for tooth preservation, but a surplus is deleterious. If there is a deficiency of HCl this should be supplied. In caries, insulin, up to 8 or 10 units a day, has given gratifiying results. Ammonium chloride is useful for obtaining acid:base balance in pyorrhea. If there is evidence of associated thyroid deficiency, thyroid extract should be given. Mental upsets should be adjusted.

More often than not, the removal of teeth for the purpose of improving the condition of a distant part fails of its object. Our infection-educated minds see evidences of infection everywhere. Focal sepsis as a cause of allergy can not be a fundamental factor. The association of dental and arthritic lesions rests, not upon a basis of cause and effect, but upon one of a common origin. We may dismiss the suggestion that cancer is a sequela of pyorrhea.

There's a lot of it that is not clear, but enough is made out to recommend the book as interesting and stimulating.

PROCTOLOGY FOR THE GENERAL PRACTITIONER, by Frederick C. Smith, M. D., M. Sc., (Med); F. A. C. S., Proctologist to St. Luke's and Children's Hospital, Philadelphia; formerly Associated in Proctology, Graduated School of Medicine, University of Pennsylvania. Illustrated with 142 half-tones and line engravings and 3 color plates. *F. A. Davis Company,* Philadelphia. 1939. $4.50

The book starts with a discussion of symptoms and works up to examination, diagnosis and treatment. This arrangement has much to recommend it. It is the order in which a case must be taken up in the daily practice of medicine.

The author says the examiner's finger is the best instrument for making rectal examinations generally, it is almost useless for examining for internal hemorrhoids.

E. H. Terrell, of Richmond, is credited with bringing out (in 1913) the quinine-and-urea-hydrochloride injection treatment of internal hemorrhoids.

Diagnostic and therapeutic measures are described in detail with a view to telling the general practitioner how to manage most such cases; and to encouraging him to take care of the situation himself, instead of referring the case and thus losing in cash and prestige.

CANCER OF THE COLON AND RECTUM: Its Diagnosis and Treatment by Fred W. Rankin, B. A., M. A., M. D., Sc. D., F. A. C. S., Surgeon, St. Joseph's and Good Samaritan Hospitas, Lexington, and A. Stephens Graham, M. D., M. S., (in Surgery), F. A. C. S., Surgeon, Stuart Circle Hospital, Richmond, Assistant Professor of Surgery, Medical College of Virginia. *Charles C. Thomas,* Springfield, Ill., Baltimore, Md. 1939. $5.50 pp.

Attention is called to the great progress in diagnosis and treatment of cancer of the large bowel in the past quarter-century. In this book the senior author records his abandonment of some steps he formerly held to be essential. From 1920 to 1930 deaths from cancer of the intestine showed the greatest increase in mortality from cancer. Adenomata of the bowel should be removed early and widely. Failure to make proper examinations accounts for most missed diagnoses. Early diagnosis of carcinoma of the large intestine may not be made from any group of symptoms. In chronic ulcerative colitis the proctoscopic examination gives the most diagnostic help.

Carcinoma of the large bowel, untreated, usually leads to death within two years. Surgery in stages is the choice of methods of treatment in the great majority of cases.

Dr. Fred M. Hodges, of Richmond, contributes an excellent chapter on Radiotherapy of Carcinoma of the Rectum.

Preoperative care, choice of anesthetic and of operation, and postoperative management have important bearing on mortality rate. Operative procedures in this field are so numerous and necessarily so detailed that a chapter is given over to their minute description.

The patient beyond hope of complete cure is not forgotten and means of palliation are described for affording him what degree of relief may be his.

This is a book written with the end always in view of telling the reader how to do the most possible for the patient.

HEADACHE AND HEAD PAINS: A Ready Reference Manual for Physicians, by Walton Forest Dutton, M. D., Formerly Medical Director, Polyclinic and Medico-Chirurgical Hospital Graduate School of Medicine, University of Pennsylvania; Visiting Physican to the Northwest Texas Hospital; Director Medical Research Laboratories, Amarillo, Texas. *F. A. Davis Company,* Philadelphia. 1939. $4.50.

The prevalence of these conditions, their various causes, the difficulty in many cases of determining the cause, the amount spent in seeking relief and disastrous consequences are recognized

Increased intraventricular and intracranial pressures may be the most common cause of headache.

Something more than 100 conditions are listed alphabetically—from acromegaly to yellow fever—as causing headache. The peculiarities in each case, associated symptoms, diagnosis and management are briefly sketched.

As illustrating the practical character of the work, and points not covered by the general run of books: Attention is called to the discussion of Pain after Dental Extractions, Vacuum Headache, Pain after Tonsillectomy, Impacted Cerumen, Headache Preceding Asthma, Headache of Psychasthenia.

This book will be of great help in showing ways of relieving pain and in suggesting possibilities which will lead to the correct diagnosis.

CARDIOVASCULAR DISEASES: Their DIAGNOSIS and TREATMENT, By David Scherf, M. D.; Linn J. Boyd, M. D., F. A. C. P., Associate Professor of Clinical Medicine and Professor of Medicine, respectively, New York Medical College, Flower and Fith Avenue Hospitals. The *C. V. Mosby Company,* St. Louis, 1939. $6.25.

Conciseness of discussion of essentials of diagnosis and treatment is the aim. The arrangement is unusual. The first chapter deals with paroxysinal nocturnal dyspnea, its significance and ways and means of heeding the warning. Then follow articles on decompensation and cyanosis—a logical sequence. Pulmonary sclerosis is said to be extremely common; the senile variety to be asymptomatic. The diagnosis of pulmonary embolism "is made much too infrequently": hemoptysis is present in a small minority of cases. Any sudden unexplained heart rate is suspicious of embolism. Enlarged liver, edema and cardiac enlargement are given proper emphasis. Diseases of the different

valves are contrasted and differentiated. Myocarditis is more prevalent in the young, coronary artery disease in the old. Sources of error in making blood pressure readings are pointed out. Hypotension is given consideration. Treatment is particularly well given.

A book of essentials, well proven and of everyday usefulness.

SURGERY OF THE EYE: By Myer Wiener, M. D., Professor of Clinical Ophthalomology, Washington University School of Medicine, St. Louis, Missouri; and Bennett Y. Alvis, M. D., Assistant Professor of Clinical Ophthalomology, Washington University School of Medicine, St. Louis, Mo. 445 pages with 396 illustrations. *W. B. Saunders Company,* Philadelphia and London: 1939. Cloth, $8.50 net.

The authors did not set out to write an eye encyclopedia. Of most conditions they content themselves with describing the one method they regard as best. Details include choosing the best time of day for deliberate operations, taking no tiring exercise just before operating, use or non-use of stimulants and special care as to what one says to students or nurses in the hearing of the patient.

Preparation of patient, choice and technique of anesthesia, and postoperative care are adequately given. The various eye operations, all the way from taking a few stitches in a lid to reattaching a detached retina, are described with the aid of carefully executed illustrations.

However well instructed he may be, the eye surgeon needs this book for reference on points that may have become obscure in his mind.

MODERN CLINICAL PSYCHIATRY: By Arthur P. Noyes, M. D., Superintendent, Norristown State Hospital, Norristown, Pa. Second Edition, Rewritten and Enlarged. 570 pages; *W. B. Saunders Company,* Philadelphia and London: 1939. Cloth, $5.00 net.

The major mental aberrations are differentiated and appropriate management prescribed. Minor deviations for which it is difficult to find a name are discussed in a helpful way. A background is provided in chapters on mind, psychic energy and the dynamics of behavior, conscious and unconscious processes, mental mechanisms and motives and the cause and nature of mental disease. The concluding chapter treats of psychiatry and general medicine.

One of the most useful books of the year. It is a plain and direct exposition of a subject too often treated of vaguely and unsatisfactorily.

OPERATIVE ORTHOPEDICS, by Willis C. Campbell, M. D., Memphis, Tenn., with 845 illustrations, including 4 color plates. The *C. V. Mosby Company,* St. Louis. 1939. $12.50.

Any intention of representing open surgery to be the most important orthopedic treatment is disclaimed.

The chapter heads give an idea of the general plan. They are: The Physiology and Pathology of Bones, Joints and Related Structures; Apparatus; Surgical Technic; Surgical Approaches; Acute Infectious Arthritis or Pyogenic Infections of Joints; Low-grade Affections of Joints; Arthrodesis, or Fusion; Ankylosis and Deformity; Arthroplasty; Traumatic Lesions of Joints; Dislocations; Fractures; Malunited Fractures; Delayed Union and Nonunion of Fractures; Acute and Low-grade Affections of Bones; Tumors of Bones, Joints and Soft Tissues; Affections of Muscles, Tendons, and Tendon Sheaths; Affections of the Skin, Fasciae, Bursae, and Vascular and Lymphatic Systems; Affections of the Nervous System; Static or Postural Affections; Congenital Anomalies.

Skin-tight plaster casts are endorsed particularly for immobilizing fractures of both bones of the leg. Braces, arch supports, sacroiliac belts etc. all have their uses. Surgical technique is elaborately and minutely described.

Low-back pain demands an exhaustive differential diagnosis. There is much emphasis on aftercare. The management of ordinary dislocations and fractures is carefully gone into. Gross deformities in young growing children may be overcome, provided there is no epiphyseal involvement. In delayed union the main feature of treatment is efficient fixation. Larvae therapy is especially valuable in infections of cancellous bone. Tendon transferrence serves a useful purpose only when carefully considered in all its bearings and when performed by the most careful technique.

The surgery of restoration of function fellowing paralysis and that of static affections and congenital anomalies is described with painstakiing care.

It is hard to imagine an author covering the field of orthopedics more thoroughly in one volume. The general practitioner, the general surgeon and the orthopedic surgeon, each, may find here whatever of diagnosis and treatment of this class of ailment is appropriate for use within his scope.

THE ART OF ANAESTHESIA, by Paluel J. Flagg, M. D., Visiting Anaesthetist to Manhattan Eye and Ear Hospital; Consulting Anaesthetist to St. Vincent's Hospital, New York; Consulting Anaesthetist to the Woman's Hospital; Director of Pneumatology, World's Fair; New York City; and Chairman of Committee on Asphyxia of the A. M. A.; 6th edition revised; 161 illustrations. *J. B. Lippincott Company,* Philadelphia; London; Montreal. 1939.

The foreword by Alexis Carrel is a tribute of which any author might well be proud. The author tells us that this edition presents the experience of 25 years for student, intern and general practi-

tioner. The history of anesthesia is traced from the decoctions and inhalants of ancient times, through the use of nitrous oxide, the introduction of ether anesthesia by Long, the demonstration in the Massachusetts General Hospital, the introduction of chloroform by Simpson of Edinburgh. It is news to many of us that ethyl chloride was recognized as an anesthetic in 1847—almost as soon as ether and chloroform.

General, local and regional anesthesia are discussed in great detail. "Suggestive therapeutics are invaluable" reminds of Horace Greeley's contention that *news* is plural, and of one of his reporters answering his telegram, "Any news?", with "Not a *new*."

The latter half of the book treats of preliminary medication, postoperative care, CO_2 and rebreathing, emergency anesthesia, aspirators, selection of agent and method of administration, new agents and technics, dental anesthesia and analgesia, intubation and causes of death in anesthesia.

We are told that the anesthetist must combine the requirements of the patient, the operative procedure and the peculiarities of the surgeon, so that the end result will be a safe, rapid induction, a maintenance entirely under control, and a speedy, uneventful recovery.

Those of us who find it impossible to keep up with the claims for the score or so of new anesthetics will be gratified and reassured by these words: "For all-round use, where a complete general anesthesia is desired, ether remains preëminent." One gains the impression that the author considers the cases in which spinal or local anesthesia is best to be very few.

The final chapter is on Pneumatology—under which term would be included anesthesia, resuscitation and oxygen therapy—and for its adoption a plea is made as a means of providing a highly trained personnel familiar with the behavior of gases and their therapeutic usefulness.

No one can speak on anesthesia with more authority than can Dr. Flagg.

A MANUAL OF FRACTURES AND DISLOCATIONS, by Barbara Bartlett Stimson, A. B., M. D., Med. Sc. D., F. A. C. S., Associate in Surgery in the College of Physicians and Surgeons, Columbia University; Assistant Attending Surgeon to the Presbyterian Hospital, New York City. Illustrated with 95 engravings. *Lea and Febiger*, Philadelphia. 1939. $2.75.

It is emphasized that a fracture is unlike a medical illness of gradual onset, unlike a surgical operation of choice, that the result depends on the kind of patient as well as the kind of fracture and kind of treatment. X-ray examinations are to *confirm*, not to *make*, the diagnosis.

This little book is as full of good usable knowledge as an egg is of meat. It can be thoroughly studied in an evening and in that evening a doctor may learn the best ways of managing fractures and dislocations.

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 3 parts Phenacetin 1 Part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

CHUCKLES

Cash Money

Confidentially and cautiously: would I like to make fifty dollars in real money?

He moved his chair closer to mine. "Just certify that I am suffering from amnesia. Next week I am supposed to be married, and I must forget to come to the wedding, and even who the girl is." A new and better venture, one with money, had come his way: $10,000 the new girl has, and there is absolutely no $10,000 worth of difference between the two, though it is true the latter is a little pockmarked, and a promising moustache somehow makes up for an almost total lack of eyebrows.

Himself almost a poet, he quoted from Matthew Arnold's lyrical *Switzerland*:

> Each day brings its pretty dust
> Our soon checked souls to fill;
> We forget because we must
> And not because we will.

"You see," he went on, "I must forget. Make out that certificate and get your fifty. I'll pay you as soon as I marry the other girl."

Leaves from a Doctor's Diary.

Count Walewski vainly imagined he could write a play. After Thiers saw the first performance he asked of the would-be playwright: "What possessed you to do it, Count? It is so hard to write a play in five acts; and it is so easy not to write a play in five acts."

Leaves from a Doctor's Diary.

We Always Shied Away From the Heavy-Weights

Mrs. Plott, 48, and weighing 260, fell off a table on Mr. Plott, weight 110. Two fractured ribs penetrated his right lung, and he may join his ancestors.—*Roche Review.*

Before saying "it's appendicitis" think of the bite of the black widow.

DR. BATTLE'S LETTER
(*From P.* 404)

he patient almost silly and ridiculous.

Various attempts to describe the pain have been made. In the attacks I have had recently there is a sensation as if a heavy man were heaving his weight upon one knee resting about two or three inches from the upper end of the sternum. The pain gives the impression that there is an intense soreness in the upper part of the chest in front; but there is not a particle of soreness in the area when it is pressed upon, in fact some pressure seems to give a slight amount of comfort. The pain most of the times has been referred to the left arm, once limited almost entirely to the biceps, at another time to the left forearm as if some tight ring were clamped around it. Again the pain has been referred to the neck as far as the lower jaw.

My object in writing of this subject of pain in this region is to emphasize the vicious circle; namely, pain producing fear, the fear increasing pain and making the patient less tolerant of pain, the more severe the pain the more fear is increased.

COMMUNICATION

State of New York, Department of Health
Albany,

August 4, 1939

Editor, Southern Medicine and Surgery
Charlotte, North Carolina

Dear Doctor Northington:

The New York State Legislature in 1938 passed a law requiring a physical examination including a standard serological test for syphilis on all applicants for marriage licenses within the state.

Several instances have been called to my attention in which residents of other states have had difficulties in securing marriage licenses in New York State because of misinterpretations of the law by themselves or their examining physicians. In order that such inconveniences may be avoided, I should greatly appreciate it if you would, through your Journal, inform the medical profession of your state of the provisions of the New York law.

1. Any physician duly licensed to practice medicine in the state in which he resides or in which he maintains his office may perform the necessary physical examination.

2. The specimen of blood must be sent to an approved laboratory *in New York State.* It is suggested that specimens be sent to the Division of Laboratories and Research, New York State Department of Health, New Scotland Avenue, Albany, N. Y., where examinations will be made free of charge.

3. The specimen should be labeled "for premarital examination."

4. The use of air mail is recommended when the specimen must be sent a great distance.

5. Upon completion of the test the laboratory will send the physician, in addition to the usual laboratory report, a certificate to the effect that the serological test was performed as a part of a premarital examination.

6. If, in the opinion of the examining physician the applicant is free from syphilis or does not have the disease in a stage which may become communicable, he should complete the certificate as indicated thereon.

7. The certificate is given to the applicant who will submit it to the clerk when the marriage license is applied for.

If these procedures are followed, there should be no difficulty in obtaining the license.

For further information relative to the marriage of persons in New York State, exclusive of New York State, communications should be addressed to the Division of Syphilis Control, New York State Department of Health, Albany.

Very truly yours,
Edward S. Godfrey, Jr.
Commissioner of Health

The State Tuberculosis Sanatorium for the eastern division of North Carolina will be located at Wilson. That city will donate a hundred-acre tract of land on which 330-bed institution will be built at a cost of approximately half a million dollars.

Ectopic pregnancy is often diagnosed appendicitis, salpingitis as twisted ovarian cyst.

American Congress of Physical Therapy Seminar and Convention

The 18th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 5th—8th, 1939 at the Hotel Pennsylvania, New York City. Preceding these sessions the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians—August 30th—Sept. 2nd.

Ample time has been provided during the convention to visit the fair and to enjoy the various activities of American's metropolis.

Registration is limited to 100 and is by application only. For information concerning seminar and preliminary program of convention proper, address *American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.*

Damaging Mistakes

(Edit. in *Southwestern Med.*, July)

When San Francisco's 15,000 municipal employees were originally placed under this panacea (compulsory health insurance) some predicted that a medical millennium was at hand. The subscribers would pay only $2.50 a month for medical care. The doctors would be amply compensated. But now shortages have become the rule, and every attempt of the administration to get the service out of the red has been another raid on the doctors' fund.

Jesse Cameron, executive secretary of the service, announced that all bills for January would be cut in half; the patients had run up $38,000 worth of care in one month. Against this in the treasury there was only $20,000. To this jolt was added a notification from Medical Director Walter B. Coffey that doctors would no longer be able to collect until 6 months after rendering service; this because of all the record-keeping involved. Soon after, Dr. Coffey announced more sad news. The fee schedule was not sufficiently "elastic"; it would have to be replaced by a "sliding scale."

While fees have plummeted downward, administrative costs remain high. Two of the 9 doctors up for re-election have refused to run again. Both had been voted down after moving that directors have access to the association's list of administrative officers, duties and salaries.

GENERAL

Nalle Clinic Building — 412 North Church Street, Charlotte

THE NALLE CLINIC

Telephone—3-2141 (If no answer, call 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
Gynecology & Obstetrics.
EDWARD R. HIPP, M.D.
Traumatic Surgery
PRESTON NOWLIN, M.D.
Proctology & Urology

Consulting Staff

DOCTORS LAFFERTY & BAXTER
Radiology
HARVEY P. BARRET, M.D.
Pathology

General Medicine

LUCIUS G. GAGE, M.D.
Diagnosis

LUTHER W. KELLY, M.D.
Cardio-Respiratory Diseases

J. R. ADAMS, M.D.
Diseases of Infants & Children

W. B. MAYER, M. D.
Dermatology & Syphilology

WADE CLINIC

Wade Building
Hot Springs National Park, Arkansas

H. King Wade, M. D.	*Urology*
Charles S. Moss, M.D.	*General Surgery*
J. O. Boydstone, M.D.	*General Medicine*
Jack Ellis, M.D.	*General Medicine*
Frank M. Adams, M.D.	*General Medicine*
N. B. Burch, M.D.	*Eye, Ear, Nose & Throat*
Raymond C. Turk, D.D.S.	*Dental Surgery*
A. W. Scheer	*X-ray Technician*
Etta Wade	*Clinical Pathology*
Mary Alice Phillips	*Clinical Pathology*
Marjorie Wade	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building **Charlotte**

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building **Charlotte**

HERBERT F. MUNT, M.D.
FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS
Nissen Building **Winston-Salem, N. C.**

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., SEPTEMBER, 1939 No. 9

Epilepsy from the Neurosurgical Standpoint*

J. G. Lyerly, M. D., F. A. C. S., Jacksonville, Florida

To make a diagnosis of epilepsy when a patient has a convulsion, without a complete neurological study, is as unjustifiable as it is to say he has a headache when there is a brain tumor. Epilepsy should be regarded as synonymous with convulsions, and it means nothing more than a symptom of some underlying disease of the brain. Not until every means has been exhausted to disclose an etiological factor should a diagnosis of idiopathic epilepsy be made.

Every convulsion originates from an irritable focus or pathological process in the gray matter of the brain. The etiology may be a scar from a brain trauma, hemorrhage from birth injury, brain tumor, abscess, meningo-encephalitis, pia-arachnoiditis, cerebral vascular disease, and many other things. The pathological process sets up a state of irritation with abnormal discharges in the neighboring nerve tissue. There may be established an epileptogenic zone from which the impulses arise causing the convulsive seizure.

We should look for focal manifestations in a patient with a convulsion. Should the irritable focus be in certain parts of the cortex the attack will be accompanied by peripheral manifestations characteristic of the function of that particular center. No doubt every one understands what is a typical Jacksonian attack. If the lesion is in the hand area of the motor cortex the seizure will start with spasm or jerking of the hand of the opposite side, spreading later to the arm, face and leg of the same side. The attack may become generalized to involve both sides of the body, with loss of consciousness. Should the lesion be in the posterior central or parietal region there will be numbness and tingling in the corresponding periphery. If the lesion is in the occipital lobe there may be sensations of flashes of light in the opposite visual field. With it in the temporo-occipital cortex there may be formed objects as pictures in the contralateral field of vision. The attack may start by turning of the head to the opposite side as if looking in the direction of the phantom object. In the temporal lobe, especially about the uncinate gyrus, there may be hallucinations of smell and taste at the beginning of the seizure. In the frontal lobe there may be turning of the eyes and head to the opposite side.

Though the convulsion may be generalized from the description of the layman, to the trained observer definite focal signs are sometimes seen at the beginning. It is usually best to place the patient in the hospital under observation for a few days. There he should have a complete neurological study including spinal-fluid examination and an oxygen encephalogram. X-ray examination of the skull is not always done until the spinal fluid spaces have been filled with oxygen gas. The ventricles and subarachnoid spaces are then outlined on the film, disclosing localized space lesions, adherent scars, atrophy and other diseases of the brain. The use of oxygen instead of air for the encephalogram makes the procedure less painful and shortens the hospital stay to half the time required for air. I would like to offer a word of warning against spinal puncture for encephalogram in cases of high intracranial pressure with choked disc. In this case ventriculography by direct injection of the gas into the ventricles should be done.

It is sometimes desirable to observe the patient in a convulsive seizure. The easiest, quickest and simplest method is to give a small intravenous injection of metrazol when the attack may be observed for focal manifestations.

Brain Tumor

Brain tumor is a frequent cause of convulsions. The incidence of convulsions has been recorded as 20.7 and 21.6 per cent by Sachs[1] and Parker[2] respectively. The convulsions are most apt to occur when the tumor is situated near the motor cortex. Parker showed that 50 per cent of the patients with frontal lobe tumors have convulsions. Likewise the percentage is high with the lesion

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

in the temporal and parietal lobes. *Whenever an adult has a convulsion for the first time, brain tumor should be considered as a strong probability in the diagnosis.* The additional signs of increased intracranial pressure should make the diagnosis fairly certain. Too frequently the neurological signs are regarded as those of deterioration and the physician makes the diagnosis of epilepsy with degeneration of the brain. I have in mind a patient who gave a history of Jacksonian convulsive attacks over a period of years, followed by a progressive weakness and paralysis of the involved side of the body and other signs of an expanding intracranial lesion, yet his physician insisted that it was a pure case of epilepsy with degeneration of the brain. At operation there was found a large, slow-growing tumor, as should be expected.

Illustrative Cases

Case 1.—A white girl, aged 16, was referred by Dr. J. C. Metts, of Savannah. She gave a history of unconscious attacks and Jacksonian seizures of the right side diagnosed as epilepsy for six years. Headache and vomiting followed these attacks. There was progressive weakness of the left arm and leg for the past year. Failing vision developed in both eyes three months ago and she was nearly blind in both.

There was bilateral choked discs of five to six diopters with secondary optic atrophy. Vision was reduced to 5/70 in the left eye and 5/30 in the right. There was a left partial spastic hemiplegia. X-ray examination of the skull showed several areas of calcification in the right temporoparietal region extending from the lateral surface to the midline.

At operation on December 18th, 1935, a very large cystic glioma was found in the right temporoparietal region containing two ounces of xanthochromic fluid which clotted on standing. There was also a solid tumor two inches in diameter which was resected. The pathological examination showed it to be an astrocytoma.

The patient made a good recovery from the operation. The paralysis of the left side began to improve. Letters from her since leaving the hospital say she has had a return of function to the left side to the extent that she can run, play ball, write letters etc. She has returned to school but has some impairment of vision. No mention was made of further convulsive seizures.

Discussion: This was a relatively benign tumor of the glioma group. It produced convulsive seizures simulating epilepsy over a period of six years, so that the case was diagnosed and treated as epilepsy, with almost irreparable damage to her vision before the nature of the lesion was disclosed by her physician.

Case 2.—White man, aged 21, admitted to the hospital January 16th, 1935, referred by Dr. R. R. Sullivan of Lakeland, Florida. The patient gave a history of many petit mal and several grand mal epileptic-like seizures for the past 18 months, numbness and some weakness of the right hand following the attacks. Slight aphasia followed a recent attack.

The right pupil was a little larger than the left and the grip of the right hand slightly weaker than that of the left. There was some impairment of memory, and the right abdominal reflex was less active than the left. Babinski was positive on both sides. The encephalograms showed the right lateral ventricle and the third ventricle displaced to the right, and that the left failed to fill. A diagnosis of tumor of the left temporal lobe was made.

At operation the next day a large cystic subcortical tumor was found in the left temporal lobe extending into the parietal area. It contained four ounces of xanthochromic fluid. In the wall of the cyst was a large solid tumor which was removed. The pathological examination showed it to be an astrocytoma. The patient made an excellent recovery, after he had several convulsive attacks immediately after the operation. Within the first six months after leaving the hospital he had two more convulsive seizures. Since then there have been no further attacks. This is another slow-growing tumor. It may recur in time but now four years have passed without any signs of return.

Case 3.—On February 1st, last, I received a letter from a patient from whom I removed a brain tumor in the Sheltering Arms Hospital, Richmond, Virginia, in June, 1930. Since this was the first unsolicited information I had from him since soon after the operation in 1930, I wish to make a report of his case.

A white man, aged 42, complained of pain, spasticity and weakness, with spasms and jerkings of the left arm and leg, of two years duration.

An ophthalmologist found the eye grounds to be normal, the right pupil a little larger than the left. There was a left spastic hemiparesis, worse in the left arm. The laboratory examinations, including blood and spinal fluid Wassermann were negative. The patient had been treated by one physician for arthritis. A distinguished consultant offered the opinion that the patient had a degenerative lesion of the right side of the brain. X-ray examinations of the skull showed nothing of significance. The slowly progressive, spastic paralysis of the left side, with the history of Jacksonian attacks involving these parts over a period of two years, suggested a slow-growing, expanding lesion of the right motor area, and a brain tumor was the most likely diagnosis.

On June 4th, 1930, under local anesthesia, a meningioma weighing 135 grams, was removed from its bed in the right motor cortex. The patient made a good, prompt recovery from the operation and the paralysis of the left side began to improve. The next heard from him was a letter dated January 28th, 1939:

"I have improved wonderfully. I can walk perfectly but can not use my left arm very well. Have gained in weight to 150 pounds and am healthy. I have been able in the last four years to work nearly all the time. I drive an automobile daily. I have had no convulsion for five years. I guess you remember me. I am a brain-tumor patient you had in 1930."

Discussion: This was an encapsulated, benign tumor and a cure may be expected from the complete removal. The irritability of the brain cortex has subsided in this case, as shown by the fact that he has not had an attack for five years.

Brain Injury

We seldom see a true convulsion following a head injury unless the brain is penetrated or otherwise very severely traumatised. Convulsions may be delayed for one or more years after the injury. The cicatrix is the result of the brain wound and is composed of dense, vascularized fibrous tissue. It is frequently attached to the overlying dura and skull, which causes pulling and stretching of the brain. A zone of irritability is set up about the scar eventually leading to convulsions and epilepsy. It may take one or more years for the irritation

to break down the stability of the normal cortex and for the convulsion to occur. In every case of post-traumatic convulsion a thorough neurological examination should be made for evidence of a focal lesion as outlined in the discussion of brain tumor. Many of these scars can be excised with great benefit to the patient. It has been shown by Foerster and Penfield[4] that a clean excision of a scar in the brain will heal by leaving a smooth glia surface which is nonirritating and that a scar of dense fibrous tissue is not apt to reform. These scars may extend deeply into the white matter of the brain to the wall of the ventricle. In making a complete excision of the scar the excision must be extended to its depth, usually including the wall of the ventricle. The overlying defect in the skull sometimes present can be repaired by a bone graft or a celluloid plate.

Illustrative Cases

Case 4.—White man, aged 20, was referred on December 11th, 1935, by Dr. C. C. Collins, of Jacksonville. Five years previously the patient fell and sustained a depressed fracture of the skull in the right frontal region. The depressed fragments of bone were removed at the time. He had no more trouble until two weeks ago when he had his first convulsion with unconsciousness without warning. He had two more generalized attacks since then.

Examination disclosed nothing significant other than a cranial defect in the right frontal region at the hair line, 1 x 2 inches. X-ray examination of the skull showed nothing other than the cranial defect.

On January 8th, 1936, an osteoplastic flap was turned down on the right side surrounding the cranial defect. The dense adherent scar of dura-to-bone was freed and the scar in the brain was excised well into the normal tissue, to the wall of the ventricle. The cranial defect was repaired by a small celluloid plate. Following the operation the patient made an excellent recovery. Four months after the operation he had one attack at night following a game of baseball. There have been no further attacks and the patient is working regularly as a machinist.

Case 5.—White man, aged 46, admitted to the hospital October 23rd, 1938, referred by Dr. J. S. Stewart, of Miami. He gave a history of falling off a scaffold in March, 1935, and fracturing his skull in the right occipital region. He was unconscious several days and in the hospital for three weeks. Five weeks after the injury he returned to work as an airplane mechanic. Six months ago he had his first unconscious attack and convulsion. There was no warning and the attack was evidently generalized, with biting of tongue. The second attack on September 13th, was of similar character. This was followed by numbness in the fingers of the right hand for a few days.

Examination showed nothing explanatory of the symptom. He had a scar of the scalp in the right occipital region. Good encephalograms made by Dr. Paul Kells, of Miami, showed a large, dilated anterior horn of the left lateral ventricle, with the tip and upper surface apparently pulled against the inner table of the skull. It was evident from this picture that the patient had a destructive lesion with adhesions at the tip of the left frontal lobe pulling the ventricle and brain upward at this point.

On October 23rd, a left frontal flap was turned down. The dura was densely adherent to the bone at this point. Likewise the brain over the superior surface and tip of the frontal lobe was densely adherent to the dura with thickening of the pia-arachnoid about the adhesions. The left frontal lobe was amputated back of the adherent mass which carried the incision through the anterior horn of the lateral ventricle. The defect was then filled with Ringer's solution and the wound closed tightly. Following the operation the patient made an excellent recovery. There was no paralysis, aphasia, nor other objective neurological disturbance. He was discharged from the hospital 14 days after the operation and has remained well according to last report.

Discussion: It is too early to determine the outcome of such a case. It is likely the patient may have an occasional convulsive seizure within the next several months until the irritability of the brain completely subsides. All of these cases whether operated on for brain tumor or scar should be kept on phenobarbital or dilantin for at least one or two years until the nervous instability subsides. A case as the one just described, without surgical treatment, is certainly destined to develop into hopeless post-traumatic epilepsy.

Localized Atrophy and Inflammatory Processes

The outlook for surgical treatment is not encouraging when there is an inflammatory process over the surface of the brain. Occasionally it is localized so that focal attacks may be initiated. If the encephalograms give further evidence of a localized process one may be encouraged to do an exploratory operation. Under local anesthesia the brain cortex can be stimulated with a weak electric current and the irritable zone mapped out. This area can be resected down to the white matter. If it is in the motor cortex this gives a temporary paralysis for a few days or a few weeks.

The same treatment may be instituted in cases of localized brain atrophy associated with brain injuries or thrombosis associated with vascular disease in a young individual. One always hesitates to remove a normal-looking cortex, even though the history and clinical findings point to an irritable focus in a definite localized area. However, good reports have been made following removal of the involved cortex in such cases.

Illustrative Cases

Case 6.—A white girl, aged 14, was first seen on June 6th, 1936. There were attacks of drawing and spasm of right foot and leg. The patient was born of a difficult labor with the use of instruments. She was a blue baby and had convulsions for four days. There were no more convulsions until four years ago when she started having attacks of cramps and stiffness of the right leg once a month. Recently they have been one or more times a day. She has not had generalized convulsions or lost consciousness.

The neurological examination was negative except for a suggestive Babinski on the right. The encephalogram showed an area of slight atrophy over the leg area of the motor cortex on the left side.

On June 8th, 1936, an osteoplastic flap was turned down exposing the left motor cortex. The leg and foot areas were outlined by electric stimulation and a subpial

resection of the cortex was carried out. Following operation there was paralysis of the right foot and leg for a few days. This began to clear up and now the weakness can not be determined. She has been greatly improved but is not entirely free of the attacks.

Discussion: This patient has not been entirely relieved and the advisability of more extensive resection of the motor cortex has been considered. However, she has been greatly improved and it appears now that the improvement will be further continued.

Case 7.—White girl, aged 9 years, admitted to St. Vincent's Hospital December 30th, 1938. The patient was well until 16 months of age when she fell striking the back of the head. Twenty-four hours later she had a hard convulsion limited to the right side followed by paralysis. She has remained partially paralyzed on this side ever since, with convulsive seizures starting on the same side and becoming generalized. For the past year she has had two to three spells every day.

Neurological examination was essentially negative other than spastic weakness of the right side, more pronounced in the arm.

An oxygen encephalogram showed a very large, dilated left ventricle and adhesions over the surface of the left cerebral hemisphere.

An exploratory operation showed dense adhesions and thickening of the pia-arachnoid over the cortex of the arm and leg area. This was excised by sharp dissection. Following the operation the patient made a good recovery. There was an increased weakness of the right arm and leg for the first couple of weeks. There have been no further convulsive seizures.

It is too early to determine the eventual outcome in a case of this kind. However, it is logical to excise a definite pathological process situated on the cortex causing convulsions and it is reasonable to assume that improvement will continue.

Conclusion

There are many other cerebral lesions causing epilepsy which I am not going into, many of which may be benefited by a surgical procedure.

I have not gone into the medical treatment of epilepsy as the paper deals primarily with the surgical lesions as described. Some form of medical regimen, whether it be dehydration, ketogenic diet, phenobarbital or dilantin, should be carried out after the operation for a long time to lessen the cerebral irritability until it gradually subsides.

It is important that the patient have a thorough neurological study which requires neurological history and examination, spinal-fluid studies, and frequently an oxygen encephalogram, before the diagnosis of idiopathic epilepsy is made.

It is more important that these studies be carried out on the adult who has a convulsion for the first time, since the diagnosis is less apt to be idiopathic epilepsy.

References

1. Sachs, E. and Furlow, L. T.: The Significance of Convulsions in the Diagnosis of Brain Tumor. *J. Mo. S. Med. Assoc.* 121-127, Apr. 1936.
2. Parker, H. L.: Epileptiform Convulsions. *Arch. of Neurol. & Psychiat.* May, 1930.
3. Foerster, O. and Penfield, W.: The Structural Basis of Traumatic Epilepsy and Results of Radical Operation. *Brain*: 53, 99-199, July, 1930.

Nonspecific Foreign Protein in Ocular Therapeutics

(S. D. Maiden, Council Bluffs, in *Jl. Iowa State Med. Soc.*, Aug.)

The parenteral use of nonspecific foreign protein is one of the greatest advances made in ocular therapeutics in the past quarter of a century. In many instances, these results border on the miraculous. The ones most commonly used are milk, antidiphtheritic serum and typhoid vaccine. Whole milk which has been brought to the boiling point for 3 minutes is injected intramuscularly, generally in the buttocks. For infants, 3 c. c. is the usual dose; for adults 10 c. c. Typhoid vaccine is preferred because one can control the degree of reaction most effectively, and the reactions are more uniform; they can be repeated more satisfactorily by increasing the dosage. One adult may not react to 10 c. c. of milk and another may have a severe shock followed by a T. of 104 to 105°; there is also considerable local discomfort following the injection of milk.

The initial dose of typhoid vaccine is usually 35 million dead organisms for males, 25 million for female, injected intravenously. Within 4 to 8 hours, one may expect a chill, then a rise in T. to 101 to104°. The dose increased by 25 million, is repeated after the T. has been normal for 12 hours. Each succeeding dose is increased sufficicntly to obtain the desired reaction. If therapeutic results are not manifest after 5 or 6 injections, one is not justified in continuing.

The best results are obtained in acute inflammations of the conjunctiva, cornea and uveal tract. However, in chronic and recurrent inflammations, this therapy affords us far better means of management than was possible before its advent.

Foreign protein therapy is of immense value in corneal inflammations, particularly in plcers. Patients wth simple abrasions of the cornea, which are not covered with epithelium within 48 hours, should receive an injection of foreign protein at once. Injuries to the cornea by finger nails, cat claws, etc. should be given the treatment immediately. If the organism is virulent, and the ulcer is progressing after the second injection of the protein, a paracentesis of the cornea should be done and repeated, as indicated, because it produces a certain hypotonus which relieves pain and permits better nutrition for the ocular tissues.

The individual is instructed to go home at once and go to bed; to expect a chill within 4 to 8 hours following the injection; to remain in bed until the T. following the chill subsides; to keep a record of his T. at 15-minute intervals until the peak has been reached, and then at 2-hour intervals. Such records should be brought with him when he reports.

In all ocular inflammations, the fundamental treatments such as the use of atropine, salicylates, heat and cold etc., should be instituted; the foreign protein therapy should be used as an adjunct.

Silicosis

(J. H. Carpenter, Chicago, in *Miss. Val. Med. Jl.*, July)

The early stages of silicosis are not disabling, and it is doubtful if any case of simple silicosis is ever fatal. Many cases of early simple silicosis are now being put back to work at their usual occupations under the improved dust conditions. Silicosis was formerly considered a progressive condition even when the person was removed from the excessive dust. This is now disputed. Silicotics are more subject to infection than other workmen, and the percentage of fatalities is much higher.

Cause of Death in Peritonitis

FRED M. DULA, M. D., Lenoir, North Carolina
Dula Hospital

FOR quite a while our ideas of the cause of death in various conditions have been rather stereotyped, and for that reason our treatment of these conditions just as inflexible as our ideas.

This is particularly true in the case of peritonitis, in which case we have been wont to ascribe to toxemia the death ensuing; it now begins to seem as if toxemia may have been a sort of diagnostic scrap-heap onto which were thrown many conditions about which we knew little or nothing. Any general condition which we could not explain was called toxemia.

We now believe that many cases of peritonitis which we have lost, basing our treatment on the concept of toxemia, we have not lost from toxemia but from a set of conditions in which toxemia played only a minor part.

The beautiful work of Wangensteen, of Herrin and Meek and others in 1933 drew our attention to the importance of distention, dehydration and dechlorination in intestinal obstruction. Herrin and Meek proved the importance of distention in initiating the vicious cycle of vomiting, dehydration and dechlorination; Wangensteen proved clinically that the prevention or relief of distention by the use of duodenal evacuation prevented the impending death in many obstruction cases.

The clinical picture of terminal peritonitis is quite similar to that of dehydration and dechlorination seen in late intestinal obstruction, save that in the former the picture is earlier completed and rendered more dramatic by the presence of the infectious agent. Here we have the same vicious cycle of loss of water and salt by vomiting, causing renewed vomiting, with loss of more water and salt and so round and round. The process is intensified by the greater fluid need occasioned by the fever resulting from an infectious process.

It is our concept, independently arrived at, though perhaps shared by others, that the cause of death in peritonitis is not a toxemia generated by the infectious process, but that it is chiefly a chemical affair in which dehydration and dechlorination play by far the most important part. To elaborate: as a result of the peritonitis there develops an ileus (which no doubt is of reflex rather than toxic origin); as a result of ileus there develops distention because air and fluids swallowed are not properly evacuated or absorbed; as result of the distention, there develops vomiting and consequent loss of fluids and electrolytes; as result of this, dehydration and dechlorination, with consequent heightening in temperature, and more rapid loss of electrolytes and fluids. The vicious cycle continues until the scene closes with a death-picture quite similar to that of known death from dehydration and dechlorination.

It is to be noted that in those cases of peritonitis associated with strangulation and in which hemorrhage and necrosis are the most important features, the obstructive factor becomes secondary; in such cases shock, both from loss of blood and from allergic reaction to the absorbed necrotic material, constitutes the principle factor, although here again the importance of dehydration and dechlorination must not be forgotten.

Also in cases of tuberculous peritonitis and other conditions in which peritonitis represents the terminal event of a long-standing wasting process, the toxic-infectious features of the case are perhaps of primary importance. However, the factors of dehydration and dechlorination are of considerable importance in any of these conditions, particularly in all post-perative peritonitides or those resulting from rupture of an abdominal viscus.

Since we assume this to be true, then it seems evident that in all probability our most important line of approach to the treatment of peritonitis from whatever cause, aside from those cases which are definitely surgical in nature, would be toward the prevention or reduction of obstruction and the restoration and maintenance of the fluid and electrolyte level. The first of these objectives is achieved by the use of the Wangensteen technique of continuous duodenal suction plus the use of the in-dwelling rectal tube to accomplish deflation from below; the second by the administration of saline and glucose in proper amount, it being remembered that too much chlorides may waterlog the tissues and so embarrass both respiration and circulation. Of course, measures directed against the infectious process, such as the use of sulfanilamide, should be used as an adjunct to the treatment of any peritonitis of infectious origin.

In summary, we believe that in peritonitis the cause of death is intimately connected with the phenomena associated with intestinal obstruction; that toxemia plays only a minor part in the outcome of peritonitis; that aside from surgical measures the treatment of peritonitis becomes largely a matter of treatment of intestinal obstruction.

The Problem of Occiput Posterior*

J. Decherd Guess, M. D., and Robt. M. Dacus, Jr., M. D.,
Greenville, South Carolina

THE incidence of occipito-posterior positions in vertex presentations is greater than has been taught in obstetrical textbooks. Frequently they are not recognized by the attendant, and often they cause no serious dificulty in labor. More often, however, they do cause certain deviations from the more usual course of labor, and not infrequently do they present real problems. There is no one best or universally applicable method of solving these problems, and one who is familiar with only one, his favorite, method is handicapped in the beginning.

The non-recognition of occipito-posterior positions explains both the reasons why their incidence is understated and why at times they give rise to difficulty. Recognition of the underlying cause of dystocia goes far in solving the problem of its relief.

Textbook statistics are based on studies of records of hospitals where diagnoses of position and presentation are made by internes and young residents who usually have neither the skill nor the interest to accurately diagnose position, and who frequently base their opinions solely upon the location of the area of maximum intensity of the fetal heart tones. Unfortunately recognition is not so easy as that, and so cases in which spontaneous anterior rotation occurs and which require no senior consultation, often appear incorrectly upon the records as the more usual anterior positions.

Whitridge Williams[1] from hospital records found the incidence to be 11.3 per cent, but he stated that the number of primary occipito-posterior positions was probably twice as great owing to the fact that many of his patients were not examined until well advanced in the second stage of labor (table 1). C. H. Davis[2] estimates the incidence of occiput-posteriors to be 25 to 30 per cent, while Piper[3] places the figure at 17 to 29 per cent. Shears[4] held that anterior positions are at least twice as common as posterior.

W. C. Danforth[5] has published statistics based upon a series of cases in which he made the examinations shortly before or early in labor. He found the occiput to lie posteriorly in approximately 27 per cent. Crotty's[6] figures from the Chicago Maternity Center give an incidence of 11.5, but in a series of cases of his own he found it to be 28 per cent.

L. A. Calkins[7] reports in a paper not yet published but which he was kind enough to allow us to read, that in his series the occiput was posterior in 48 per cent of the vertex presentations. From this he concludes that occiput-posterior is not such a serious complication as has been urged.

The figures from our small series of personally conducted cases, patients who had been followed carefully throughout pregnancy and who were re-examined for position early in labor, are interesting. In the last 334 such cases delivered by us, all presentations were vertex and in 75 the position was posterior, yielding an incidence of 22.5 per cent.

We have studied the figures from the Greenville General Hospital for a period of one year, and find that in 501 vertex presentations, the occiput lay posteriorly 57 times, an incidence of 11.1 per cent, the same as that reported by Williams from the Johns Hopkins Hospital.

Table 1

	%	*Source*
Williams	11.3	Hospital records
Greenville Gen.	11.1	Hospital records
Maternity Center	11.5	Records
Guess & Dacus	22.5	Personal records
Williams	22.6	Estimated
Piper	17-29	Records
Danforth	27	Personal records
C. H. Davis	25-30	Estimated
Crotty	28	Personal records
Shears	33	Estimated
Calkins	48	Supervised & personal

Thus the incidence of posterior positions in vertex presentations probably lies somewhere between 21 and 48 per cent; but such positions cause sufficient difficulty to be recognized by the inexperienced in only 11 per cent. In no other way can one explain the recurrence of 11 per cent as the reported incidence in hospital records. However, there is a wide difference between 21 and 48 per cent, as it occurs in the personal series of different observers and it is difficult to reconcile these figures. One factor may be a difference in definition. For example, Calkins defined posterior position as that position in which the small fontanel was actually back of the transverse diameter of the pelvis when the determination was made. It is readily conceivable, since the transverse di-

*Presented to the meeting of the South Atlantic Association of Obstetricians and Gynecologists, held at Charleston, February 11th.

ameter of the pelvis can not be laid out with geometrical accuracy, that any two examiners might disagree as to whether in a given case the small fontanel lay on or slightly behind the transverse diameter. In our cases our criterion was not so rigid, but we believe it is more accurate. Our first indication comes from abdominal inspection and palpation. If the small parts are readily felt anteriorly while the plane of the back is deep, and if the face seems more superficially placed as it lies above the pubis than does the dipping occiput, the presumption is strong that the position is posterior. If later in labor the large fontanel is more easily felt on rectal examination than is the small, and if the small fontanel appears to be on, or behind, the mid-pelvic transverse plane, and if the sagittal suture seems to dip posteriorly from large to small fontanel, the position is recognized as posterior. If, because of caput or moulding, the fontanels are not recognized and the sagittal suture is not felt, the posterior ear is the indicator and is easily felt after cervical dilatation. Further, restitution of the head after birth is given proper consideration. We believe that it is rare, except in the case of babies so small as to require no particular mechanism, that the shoulders engage in the same pelvic oblique diameter as did the head, and if this is true external rotation of the head will return the occiput to its original position with regard to the oblique diameter of its engagement. If the occiput after engagement was directed toward the posterior end of an oblique diameter, restitution after delivery of the head causes it to resume a posterior direction. If this does not occur, engagement was most likely not in the posterior position.

The number of factors which operate either singly or in unison to bring about engagement with the occiput lying posteriorly may all be resolved into a single ultimate factor, namely, a failure of flexion of the head to occur or to be maintained.

Whereas it was formerly taught that engagement of the head usually occurs with its sagittal diameter lying in one of the oblique diameters of the pelvis, and that engagement in asynclitism was almost rare, opinion seems to be changing. It is now recognized that more frequently the sagittal diameter of the head and the transverse diameter of the pelvic inlet are parallel before engagement, and that the mechanism of engagement in asynclitism is more frequent that was once thought. Such a mechanism would tend to explain why engagement in relative deflexion may occur with relative frequency. It appears to us that it may also explain some of the so-called deep transverse arrests. Is it not possible that some of these at least are not arrests in rotation as well as in descent, but are arrests in descent alone because engagement had begun with the occiput already lying transversely, and neither anterior nor posterior rotation had been initiated? Furthermore, is it not reasonable to suppose that this condition might frequently be associated with those pelves formerly classified as funnel. The slight funneling would serve to slow up descent, encourage deflexion and interfere with the tendency to rotate.

Occipito-posterior positions have a rather characteristic effect upon labor. Pregnancy tends to go beyond calculated term. Because of this the babies tend to be larger than average. Probably it is also true that large babies tend to engage in the posterior position. Labor is likely to have many false starts and stops, and these may go on for days, accomplishing some effacement and even some dilatation of the cervix. When labor is well begun, actual suffering is likely to be greater than usually is the case. The cervix tends to dilate more slowly. It is said that dilatation is more likely to be incomplete than in anterior cases. We have not found this to be true nor have we found that it is any more serious to induce labor by rupture of the membranes in posteriors than in anteriors, although textbooks urge especial care to preserve the integrity of the membranes as long as possible in posterior cases. There is little doubt that the fear by laity and doctor alike of dry labors comes from the fact that the membranes do frequently rupture early, often before beginning of labor, in posterior positions and labor is long and hard because of the posterior position and the large size of the baby rather than because of the early rupture of the membranes. Those of us who routinely use instrumental rupture of the amniotic sac as a means of induction of labor certainly do not fear dry labor because of its dryness.

Labor in posterior cases tends to be longer, both because of inconstant character and irregularity of the uterine contractions and because of the greater force and time required to drive the head through the mechanisms of rotation and descent. If given time, anterior rotation and descent will occur unassisted in most cases. Rotation may not begin until the occiput has reached the perineum and is distending the vulva.

In those cases where complete anterior rotation does not occur either one of four things may happen. There may be no rotation and labor may become obstructed. Rotation posteriorly may occur, giving rise to occipito-sacral position and these may rarely deliver spontaneously, but more often require forceps or other interference. Anterior rotation may begin and proceed until the position is that of occipito-transverse, and there further rotation and descent stop, the so-called deep trans-

verse arrest. Finally engagement may fail to occur, the head remaining arrested as a posterior at the superior strait.

The best method of solving any difficulty depends upon three factors, namely, recognition and comprehension of the problem, the general or the peculiar skill of him who seeks the solution, and the environment, including availability and type of assistance. This statement forcibly applies to the matter of handling occipito-posterior labors.

The first element of such a problem is that of diagnosis. If one has recognized the condition early, he is in position to anticipate a slow erratic labor and to conserve his patient's strength and to reassure her and her family before they become too apprehensive. Should dystocia occur, he is in position to proceed with judgment and assurance in the exercise of the obstetrician's art, having already made his plans.

The diagnosis is not always easy. Abdominal palpation is frequently more informative than is vaginal examination, certainly before wide dilatation of the cervix or after large caput formation or extensive moulding. Deviation from the usual course of the first stage of labor is very suggestive. The only sure and unfailing method of making the diagnosis positive is by palpation of the fetal ear, and this should be done always before forceps are applied.

To say that because the general practitioner has not had the necessary skill to safely interfere in these cases, it should be the universal rule to allow women every opportunity to deliver spontaneously, is very unwise. One element of the obstetrical specialist's usefulness should be to safely deliver after a reasonable length of time women who might deliver spontaneously if left alone for a much longer time. By doing so he saves the patient from unnecessary suffering and physical strain without adding danger to either mother or baby, but rather lessening the risk to them. Therefore, the problem for the family doctor is different from the problem for a member of this group, and our further remarks apply solely to those so skilled.

The question then is: Shall one interfere after full dilatation of the cervix, and if so, what method shall be used to effect delivery? One must choose from the following: cesarean section, podalic version, manual rotation and forceps extraction, rotation by application and re-application of forceps of the Simpson type, or, finally, rotation by the application of one of the various specially designed forceps like the Kielland or the Barton.

The writers are strongly adverse to delivery by podalic version. They feel that if there were no cephalo-pelvic disproportion there would be little or no need for interference, and that even slight disproportion makes delivery by version and extraction dangerous for the life of the baby and for the integrity of the mother's soft parts. Further, as has been mentioned these babies tend to be large and the membranes tend to rupture early, making version difficult and dangerous.

Cesarean section rarely has to be resorted to. However, when engagement has not occurred, and the baby is large, it is wise not to wait too long after rupture of the membranes to seriously consider this method, and labor should be so conducted from the beginning as to make the operation safe.

In our hands we have felt in practically every case where we were able to rotate the head manually, that interference was unwarranted and that such rotation would have occurred easily and spontaneously.

We agree, and we have had a bit of unfortunate experience to justify such agreement, with the opinion of Whitridge Williams[6] who stated that in case of an occipito-posterior, in which it is uncertain from which side the occiput came, it is better not to rotate anteriorly, but to deliver as a posterior after deep episiotomy. If it is known from which side the occiput rotated, a modified Scanzoni maneuver can be done, using a Simpson type of forceps, preferably one with non-fenestrated blades. Where there has occurred a deep transverse arrest, we have found the Keilland forceps safe and efficient, when properly and gently used. Certain things are absolutely essential to make this true. The patient's bladder must be empty. She must be thoroughly relaxed so that there will be no straining until rotation is complete, and the baby's head must be pushed up somewhat so that it is released from the hold of surrounding tissues before it is rotated. It is at times advisable to apply other forceps, embodying the axis traction principle after rotation and fixation. Extraction should be aided by the efforts of the woman herself.

One final thought. Whether we wish it or not, and regardless of whether or not it is best for mother and baby, women are going to have some form of analgesia early in labor and more when full dilatation and retraction of the cervix is near. All forms of effective analgesia seriously interfere with the effectual use of the abdominal muscles before the perineal stage of labor. Posterior position requires strong expulsive force to bring about rotation and descent. For these reasons many more cases of occiput-posterior are going to be recognized than formerly and interference is going to be required more frequently than heretofore.

Summary

The incidence of posterior positions in occiput

presentations has been discussed and statistics quoted. The peculiarities of labor and the difficulties of delivery have been described; the relationship of skill and environment on the preferable method of handling those cases where labor is not progressive has been mentioned; and alternative methods of treating them has been touched upon.

—202 East North Street

References

1. Williams, Whitridge: Obstetrics. *D. Appleton & Co.*
2. Davis. C. H.: Gynecology and Obstetrics. *W. F. Pryor Company, Inc.* 1934.
3. Piper, E. B.: Obstetrics and Gynecology, Curtis, *W. B. Saunders Co.*, 1933.
4. Shears, G. P.: Obstetrics, *Lippincott Co.*, 3rd Edition
5. Danforth, W. C.: *Am. J. Obst. & Gynec.* 28:756, 1934
6. Crotty, J. G.: *Am. J. Obst. & Gynec.* 30:97, 1935
7. Calkins, L. A.: *To be published.*
8. Williams, Whitridge: *Ibid.*

History of Pathology

(T. S. Tirumurthy, Madras, in *Indian Med. Rec.*, May)

The history of medicine is largely the history of pathology, the story of man's conception of the nature of disease and disease processes and his great endeavours for cure, alleviation and prevention.

Few have been educated to think or reason logically in matters of health, especially when they are themselves ill. Faith and sentiment are more overpowering than cold reason.

As the primitive man could offer no rational explanation to the cause of disease, he conceived that evil spirits, gods, demons or witches brought about disease.

During Homeric times, medicine does not appear to have been dominated by religion. Asclepius plays the role of a king and not a god. But later Asclepius was defied and a temple was built to the "God of Healing." Subsequently, the temple structure and the image remained, but the spirit of the science of healing, enquiry and research had departed.

We next come to the humoral conception of disease in the old Greek empire and the Roman empire which persisted till the establishment of the cellular theory of the 19th century.

Primitive man in his search for food gained experience of poisonous plants and of those which had carminative, purgative, expectorant, diuretic, anodyne, or other therapeutic properties. Observation of the behaviour of diseased domesticated animals were carefully recorded. But he believed in magic and miracles.

In early medieval times the medical art had made considerable progress, but during the Dark Ages it sank into superstitious speculations. Reason and enquiry were abandoned. Surgery occupied a humble position.

As early as the Gupta times India was famous for the tempering of steel and King Porus is said to have asked for 30 lbs. of steel in preference to gold or silver for a present to Alexander the Great. In the 6th century, the Hindus had known the various chemical processes of distillation, sublimation, calcination, etc. From India the science of chemistry spread to the Persians and from them to the Arabs, who later were instrumental in spreading that knowledge into Europe.

The processes of digestion were well-understood. Atreya anticipated Weismann by 2400 years. He held that the parental seed is independent of the parental body and contains in itself, in minature, the whole parental organism. The development of the fetus was described with much accuracy. It was noted that the sex of the fetus remains undermined for some time.

Medicine, though it may have had its origins in magic, was always the enemy of magic.

Susruta lived in the 5th century B. C., and Charaka in the 2nd century A. D. Susruta was the Professor of Medicine in the famous Benares University. His works are in Sanskrit. Charaka composed an Encyclopedia of Medicine, known as Charaka *Samhita*, which is still extant. Bhavamisra (1550 A. D.) is said to have described the circulation of the blood a hundred years before Harvey.

Vaccination, unknown to Europe before the end of the 18th century, was known in India as early as 550 A. D. The science of hypnotism and hypnotic therapy appears to have originated among the Hindus.

Opinion is overwhelmingly in favour of the theory that the Medicine of the Greeks was largely borrowed from India.

The stable quality of the Hindu culture lies in the fundamental belief in the unity of life, the wholeness of the maintenance of good morals.

When medicine failed to comfort and solace the sick, the physician resorted to prayer and what specifics failed to do, incantations often achieved.

Babylon was the cradle of culture in 300 B. C. Surgery was subordinate to internal medicine. Physicians were educated in the medical schools, surgeons had to learn by apprenticeships. That diseases were caused by parasites, gaining entrance into the body from without or originating internally, was taught in those early times. It was thought that worms brought about inflammations, suppurations and tumours. Fevers and chronic diseases were supposed to be caused by a derangement of the body fluids, particularly of the blood and lymph.

In ancient Egypt the clinical methods of inspection, palpation and auscultation were known, and advanced views on hygiene and sanitation. The prophet Moses drew up an excellent sanitary code for the Hebrews, wisely incorporating this code into their religion. As among the Hindus, so among the Jews, personal hygiene and sanitation were made part of the religious observances.

Before the time of Hippocrates, the Greek temples were places where treatment was given by suggestion, often inducing sleep, the "temple sleep" of the ancient Greeks. During the time of Hippocrates these temples became real hospitals or sanatoria. Hippocrates preached that diseases arose on account of man's ignorance, that man's diseases were man's problems and that, therefore, he should find a solution for them by his own reasoning and research. To Hippocrates the symptoms of illness were symptoms of healing.. Alas!, very few men of even modern medicine grasp the significance of this conception.

Pathology did not make any progress among the Greeks, because the post-mortem study of disease was prohibited.

By the conquest of Alexander, the Great, Greek medicine established itself in the School of Alexandria. The famous library is said to have comprised almost a million volumes. In Alexandria there were museums, botanical and zoological gardens and clinics and hospitals. St. Luke is stated to have received medical education in the School of Alexandria.

The Romans improved surgical technique and laid the foundations for specializing in the various branches of medicine.

There the Theory of Methodism was evolved; that all diseases were due to disorders in the natural arrangement of "atoms" of which the body was supposed to be composed.

(To be continued)

Effects of Mental Handicaps Upon Self-Reliance and How to Overcome Them*

O. B. Darden, M. D., Richmond, Virginia
Westbrook Sanatorium

THIS topic which has been assigned me by your committee covers so much ground that it will be impossible to discuss in detail all of the factors involved. Therefore, that we might consider the subject with mutual understanding, I think it wise to state its limitations and, at the same time, to define the terms used in the discussion.

Mental handicaps may be either congenital or acquired. Such conditions as mental retardation, mental underdevelopment, and psychopathic personality are native to the individual and will not be considered in this discussion. The care and management of these conditions require special attention and it is not the purpose of this paper to deal with such situations. There are, however, various abnormal mental reactions that have their origin within the individual's environment. Within this group may be mentioned a few of those mental traits or attitudes that interfere with normal intellectual and emotional maturation, and which may be considered under the concept of mental handicaps. Within such a category may be placed fear, obsessions, suppressions, frustrations, a feeling of inferiority or superiority and many other unwholesome attributes developed as phases or features of emotional instability through an unsatisfactory handling of emotional problems.

Our term self-reliance likewise needs clarifying. This may be thought of as a personality attribute that allows one to adjust satisfactorily after eliminating the early dependence of child-life. It is this self-confidence that furnishes the dynamic force behind one's formation of a constructive philosophy, but this self-reliance may be seriously interfered with by mental handicaps.

If I were to call your attention to a number of physical handicaps, I believe you would experience no difficulty whatever in realizing how such conditions might interfere with the normal progress of the individual. You would tell me immediately that it is easy to understand how this may occur. Yet you must be familiar with numerous individuals in whom some physical abnormality has been overcome, with resulting establishment of satisfactory efficiency. And so it is with mental handicaps. They may definitely and conspicuously interfere with one's progress or they may be overcome with proper understanding and management. Different individuals will require different methods of care, but equally satisfying results may follow.

An intelligent discussion of this subject naturally brings up the origin of mental handicaps. How do they develop? It is well known that our behaviour is motivated by dynamic instinctive urges or drives. These urges transformed into behaviour would often lead us into conflict with social or ethical standards if there were no attempt at control. It must be remembered that biologic drives are unmoral. There is no good and no bad; they are normal to the individual. Only social pronouncement makes them right or wrong, good or bad, moral or immoral.

Control and guidance are recognized, however, as necessary influences if we are to live comfortably and acceptably in our environment. But I would stress the point that behaviour, for diagnostic purposes, should not be considered good or bad, but should be understood in terms of the motivating force behind it. Behaviour is the outward expression of instinctive urges. Obviously these urges must undergo some form of control. This control mechanism is played upon by emotional, intellectual and ethical influences. Naturally the child has not developed these control agencies as fully as the adult and cannot, therefore, be expected to act with the same discriminating judgment.

But too often the control mechanism is found to be not wholly within the individual but somewhat also in his environmental relationships. The child is traditionally taught to conform to a pattern of behaviour not in keeping with his own drives. Thus conflicts between the individual urges and his environmental influences are constantly arising. The taboos of society and of civilization constitute a constant barrier to the biologic forces within us. Dealing with these conflicts by the individual brings into play many mental mechanisms. Repeated utilization of the same mechanism, both for the purposes of understanding and for control, causes the adoption, by habit formation, of characteristic personality traits. The solution may or may not be satisfying to the individ-

*Read by invitation to the Parent-Teacher Association of Patrick Henry School, Richmond, Virginia, January 17, 1939

ual. If not satisfying, the accepted attempt at solution, though advantageous to society, may represent a beginning failure at adjustment. Resentment may be harbored; suppressions may be utilized; a feeling of inferiority may result; inadequacy may be felt; antagonism may be aroused. One might, of course, continue to enumerate many other forms of unhealthy inhibitions that might follow. These unsatisfying solutions thus tend to lead to undesirable personality traits and to unhealthy mental habits. Unhealthy mental habits are apt to become firmly established and to be made use of afterwards in attempting to deal with difficulties. We may often find, therefore, a continuous utilization of such undesirable habits or attitudes in meeting every-day problems. Obviously, only a chaotic emotional state can result. Maladjustment follows. Inability to take and to hold his proper place in society follows. The child becomes less and less able to meet competition on the level with his more fortunate companions. A clear realization of this situation may become evident to the child, or the child may only feel that his ambition is thwarted, his purpose frustrated, and that he is failing to gain sufficient self-reliance and self-confidence to enable him to meet the demands of society. In failing to develop a feeling of self-confidence the growing child will remain, throughout life, inadequate and unhappy, and perhaps dependent.

The unhealthy mental habits that have been firmly established become a part of the individual's philosophy. If not corrected, such an attitude will dominate his life. If he goes out into the world to meet healthy competition equipped only with such unhealthy methods he will certainly fail in his efforts to solve his problems. Accumulating years and experience do not help to unravel the emotional tangle but they serve only to increase personal discomfort and unfitness. The individual has failed, because his early training failed to develop self-confidence and self-reliance to the point where he could meet his problems understandingly and squarely, deal with them honestly and solve them satisfactorily. He has been thereby robbed of the opportunity of developing a mature emotional status and a totally integrated personality. Shyness, timidity, apparent over-confidence, interfere with progress in development and self-maturation. Confidence in ability to formulate a program of wholesome living and to carry out a constructive philosophy of life is shaken or completely annulled in such an underdeveloped personality.

Behaviour is not always a true representation of one's feelings. Acceptable behaviour, therefore, does not always imply a satisfactory adjustment. Obedience to the mandates of society, to parents, or to other authorities, does not within itself mean a wholesome adjustment. Unhappy emotional reactions may accompany apparent good behaviour without, for a while at least, becoming manifest. These unhealthy reactions may be suppressed, for the time being, to be released later and become the dominating influence in shaping the individual's behaviour pattern. Realizing his inadequacy and his failure to establish himself in society he may develop an unwholesome attitude toward persistent efforts and he may adopt some other form of behaviour that is even more unacceptable to society, but less trying to him. Such a state may be antisocial behaviour or it may represent mental illness. It is not enough to observe that a child behaves either acceptably or unacceptably; what counts is understanding the significance of the particular behaviour. And this is not so difficult as it might seem to be. The utilization of the helpfulness of time and of a common-sense attitude in an attempt to understand the child will disclose the meaning of his behaviour and help to determine whether his experiences are satisfying and wholesome. In such fashion it can be ascertained what corrections need to be made in his attitudes.

Just as in most other forms of treatment, the best treatment for such mental handicaps is prevention. That they may often be prevented there can be no question; that they often arise because of environmental influences there can be no doubt; that the home is the most potent factor in the young child's life goes without saying; that parental influence, therefore, is the earliest and strongest influence in shaping the young child's mental habits is undeniable. What a responsibility rests upon parents! Yet the statement is true and we parents must try to meet that responsibility with all of our resources. What then can be done toward insuring in every child healthy growth of body and of mind?

In trying to answer this question, I might call attention to the two extremes in possibilities: one is absolute freedom of the child, while the other demands forceful dependence upon others long after the child should be acting upon his own initiative. There is a middle ground, however, a common-sense attitude, founded upon sound psychologic principles. There can be controlled freedom; there can be sufficient protection without over-solicitude; there can be guidance without complete robbery of self-initiative; there can be help for the child without complete domination of his activities by others. Many other things might be suggested, but time forbids enumeration

of more than a few of those that would be helpful in the establishment of a healthy child attitude.

From what has been said already, it may be surmised that the chief aim in child-training should be that he develop habits of conduct to avoid conflict with his environment and certain mental attitudes to avoid conflict within himself. Not only, then, are we concerned with the child's behaviour, but with his feelings as well. Already the two extremes in child training have been mentioned. That either of these will be destructive to happiness and success, if followed, needs no explanation. Too much freedom may permit of temporary adjustment, but it will eventually lead into trouble. Brought up in a too-protected atmosphere at home the child is certain to be totally unfitted to meet competition when he goes out into the world. As the child grows up he should be taught to give and take, to share with others, to respect the rights of others, and that others will likewise respect his rights. Such a policy the child must adopt early and cultivate in later life in his interpersonal relationships. He must be taught that he cannot have everything that he wants; some things must be disallowed; failures must be endured; he cannot always accomplish everything he tries.

Just as bad as too much personal freedom is the application of too much force to the child. A child forced intellectually or socially may become antagonistic and finally rebellious. Forced obedience is costly. Children have their own plans and ideas and they have their own way of carrying on their own activities. Their attitudes must be respected. Firmness, when needed, can be and should be used but without too much force. Bribes and threats and promises can have only a harmful effect.

Too much protection of the child by parents has a tendency to bring about various types of unwholesome reactions. Over-solicitude, anxiety and complaints cause the child to look for trouble or excuses and may lead to unhappy introversion. This sort of training or lack of training leads to the development of many unhealthy inhibitions.

A firm, common-sense, middle-ground policy in dealing with children will go a long way in tending to prevent such mental handicaps.

Once developed, however, we should set about trying to remove them as quickly as possible. It must be remembered that we should be as much concerned about the child's feelings as about his behaviour. A sympathetic approach and friendly attitude toward the child, with sufficient time, will bring about an understanding of his behaviour and his attitudes. If the behaviour has been acceptable, but at the expense of an emotional conflict within the child, our duty is to determine what the irritating influences are. Having an understanding of the child's feelings we can institute such corrective measures as are indicated. The adoption of the same sort of common-sense attitude toward him will help us to see our own mistakes and enable us to replace with constructive measures the destructive measures with which we had been dealing with the child.

The home should be a haven, a place of rest, a place for family intercommunication, a place where we find comfort and happiness; and we find these blessings where there is mutual understanding among members of the family. Too often, however, the home becomes an emotional cesspool or garbage-can, where all complaints are dumped and nothing constructive is offered; where there is a constant exchange of unpleasantries throughout the day. The young child is quick to sense such a situation and likely to adopt, unconsciously, the fussy attitude of the family as a part of his general program of living. The child is forced, consequently, to seek comfort and pleasure elsewhere than at home.

Parental contacts with children should be helpful and friendly. We must be companions to them; they should gladly bring their problems to us as well as their pleasures. They must feel free with parents; we must not be too busy to listen to them; we must help with their troubles sympathetically and constructively, in a common-sense way. In the adoption of such an attitude toward them, we will go far toward the development in them of wholesome personalities, happier dispositions, and wills to achieve.

Efficacy of Male Sex Hormones

(H. H. Turner, Oklahoma City, in *Endocrinology*, June)

Fifty-four patients with various genital troubles including adult hypogonadism, sexual weakness of senescence, adiposogenitalism, gynecomastia and benign prostatic hypertrophy, were treated with testosterone propionate. In doses of 10 to 75 mg. weekly, it was found effective in every hypogonad case, as evidenced by hair and penile growth, erections and emissions, libido and potentia, and by generalized changes in secondary sex characteristics. Gynecomastia with normal secondary sex development is apparently not influenced by injections of the hormone. Considerable relief of the subjective symptoms of sexual failure of senescence and of benign prostatic hypertrophy was afforded. No untoward by-effects were noted in any of the cases treated.

A Maneuver to Facilitate Abdominal Palpation

(C. H. Osborn, Melbourne, Australia, in *British Med. J.* May 27th)

Head and neck on a pillow and the hip and knee joints semiflexed obtains a certain amount of relaxation, more if the examiner gives his patient the simple command "raise your tail bone one-inch from the couch." Few patients misunderstand this order and fewer lift the whole lumber spine from the couch. The position can be maintained with perfect ease for a considerable period.

Functional Disturbances of the Genital System*

William M. Rowlett, M. D., Tampa, Florida

ALTHOUGH a multitude of physical and nervous disorders are attributed to endocrine dysfunction, these glands of internal secretion seem to have only a passing importance until the individual approaches adolescence.

From the very first evidence of gonadotropic hormonal activity, which is usually detected in the nervous mechanism, a rapid metamorphosis takes place in the girl of the early teens. In the short period of a few months the hormones permeate her entire system, stimulating her genital system to an awakening, moulding mammary glands and bodily curves to the pattern of mature womanhood and giving her a new psychic outlook on life. Voice changes, the growing of hair in new locations and a rapid growth are detected. Hyperplasia of the endometrium has taken place under the stimulating influence of the estrogenic hormone. With this hormone's sudden withdrawal the endometrium exfoliates and the menstrual flow is on. Under the excitation of this new substance in the blood-stream and its stimulating effect upon the sympathetic nervous system, libido is created, growing and breast pains are complained of, acne vulgaris and other skin blemishes make their appearance, with greater liability to digestive upsets. After a time rhythmicity is established and the young woman passes through the period of her greatest physical endurance and mental alertness, usually between the age of 23 and 40, after which the rhythmicity of the endocrine system falters and the patient becomes conscious of the fact of a physical and mental retrogradation.

With the lessening of ovarian activity there is a decrease in the genital-stimulating hormone, estrogen. Without its restraining influence on the pituitary gland the mechanism of the entire endocrine system is thrown out of gear. With this glandular imbalance the woman enters on the period of the menopause, usually with varying degrees of tachycardia, hot flushes, headaches, irritability, insomnia and menstrual irregularities.

For one to understand more thoroughly these symptoms and the nervous mechanism he should study the function of the sympathetic nerves, the centers in the mid-brain and the delicate ganglionic network, first described by Winslow in 1732 but more minutely and recently by DeGoris[1].

The most pronounced physical changes, as the menopause phase advances, are to be found in the atrophy of the mammary glands, the ovaries, uterus, vaginal mucosa and labia, accompanied by a lessening of libido. In the cessation of ovarian activity, the shedding and reformation of the layers of the vaginal mucosa ceases. This is followed by atrophic changes. Thus, the mucosa becoming more susceptible to infection, we frequently find the ulcerative condition known as senile vaginitis. In a series of 25 cases of senile vaginitis treated with estrogenic hormones by Jacoby and Robbiner[2] 11 patients had a complete relief and 13 were relieved of itching, burning and vaginal discharge. Only one was not materially benefited. Numerous investigators have come forward with convincing evidence that organotherapy is a rational procedure and has a decisive place in assisting in the readjustments of the climacteric. This alone, however, without a sympathetic, common-sense, phychiatric attitude, will prove disappointing in treating a clientele make up of women of wide social and economic interests.

Dysmenorrhea, usually resulting from an imbalance between the estrogenic hormone and progesterone, is one of the most widely discussed and confused of the functional menstrual disturbances. The methods of treatment have been legion. Dysmenorrhea, of Greek origin, means painful monthly flow, and is misleading. Will not some modern investigator so revamp the term as to give it a more significant meaning? Why not *uteroalgia?* The distress occasioned by this functional disorder is frequently so severe as to necessitate the schoolgirl or working woman losing many days from her duties. Dilatation of the cervix and curettage, based on the obstructive theory, was for long the universally used treatment. I have found a very large percentage of my patients suffering from the malady with uterus of normal size, shape and position; therefore, I have doubts of obstruction being a contributing cause in dysmenorrhea. The uterine plexus connects up with the ganglia cervicalia which extend down each side of the cervix. The relief obtained from dilatation, no doubt, was due to stretching these nerve fibres. A thorough dilatation of the sphincter ani might have given results just as good. Hertzler and his associates wrote of goitrous dysmenorrhea resulting from an intestitial thyrotoxicosis and of improvements following the administration of thyroid substance in some cases[3].

*Presented to the meeting of the South Atlantic Association of Obstetricians and Gynecologists, held at Charleston, February 11th.

There recently came under my care a well-developed, slightly obese 14-year-old girl who had never menstruated, but had typical periodic uterine colics that required a day or two in bed every month. A pelvic examination gave no explanation. Her basal metabolism rate was minus-21. After two months of treatment with thyroid and ovarian substance she is menstruating normally with very little pain. The estrogenic substance is recognized as the stimulating hormone that creates uterine contractility. An excess of this hormone is held responsible for the painful uterine contraction during the menstrual cycle. Progesterone inhibits the effects of the estrogenic substance. Thus, in progesterone and the ovary-stimulating gonadotropic hormones of the anterior pituitary, the gynecologist sees a ray of hope in the theatment of functional dysmenorrhea.

By a special apparatus devised for recording uterine motility[4] it has been shown that the uterus is quiescent at the mid-menstrual period and its greatest motility is at the onset. At a time when the estrogenic substance reaches its greatest concentration and progesterone is at its lowest, with the increase of progesterone in the blood, the same apparatus showed a decrease in uterine motility. I have produced in the normal healthy woman typical dysmenorrheal pain by stimulating the cervical ganglia with an electric needle and have temporarily relieved the colicky pain by injecting 70-per cent alcohol into the cervical ganglia. In the cervix of castrated women, with degeneration of the cells of the ganglia of Frankenhauser, I have found it very difficult to produce spasmodic uterine contractions by stimulating the cervical nerves with an electric needle. In those cases of functional dysmenorrhea that organotherapy, dilatation and curettement or hygienic measures will not relieve, presacral nerve resection is a valuable therapeutic measure. The delicate autonomic nervous system is apparently unaffected by the various stages that make up the menstrual cycle in some women, while in others there is so great a hypersensitivity that nothing short of a sympathectomy will give relief[5].

Functional uterine bleeding, menorrhagia and metrorrhagia are usually the results of abnormal ovarian function. In arriving at a diagnosis we should first exclude such conditions as uterine and ovarian tumors and infection, hydatidiform mole, abortion and ectopic pregnancy. An over-secretion of estrogenic substance, we find, produces an abnormal endometrial proliferation. This menstrual disorder may be encountered at any adult age, however, it is most frequently seen during adolescence and approaching menopause. At both of these periods of the woman's life where there is a menorrhagia there appears to be an abnormal ovarian rhythm brought about by an inharmonious interaction of the gonadotropic hormones of the anterior pituitary. Wilson and Kurzrok[6] contend that functional menorrhagia is due to a special hormone secreted by the anterior pituitary gland; that it is separate and distinct from the follicle-stimulating and luteinizing hormones and is not gonadotropic but acts directly on the endometrium. MacGregor[7] advances the theory that dysfunctional uterine bleeding may result from follicular cysts found in the ovary, the fluid of which has estrogenic properties. The cysts act as depots for a continuous supply to the blood stream of estrogenic substance thereby producing a continuous endometrial stimulation. Regardless of the factor that causes the bleeding the rational treatment seems to be the corpus luteum hormone supported by the anterior pituitary.

The matured follicles secrete estrin which causes the proliferation of the endometrium, following the estrogenic hormone is the maturing of the corpus luteum and liberation of progesterone which plays a double role—a secretory effect upon the proliferating endometrium and a sedative effect upon the autonomic nervous system, the progestational phase. It is not unusual to hear a patient say that her whole disposition improves as soon as menstruation is freely established. If the endometrium remains in the proliferative phase[8] as in amenorrhea alternating with menorrhagia, we have what is known as metropathia hemorrhagica or dysfunctional uterine bleeding, which may be the result, as stated previously, of the over-stimulating effect of estrin stored in follicular cysts in the ovaries.

Amenorrhea is another of the functional menstrual disorders which produces a distressing situation in the mind of the average woman. She believes she is either pregnant or there is something else fearfully wrong with her. If the condition is allowed to persist for any length of time, uterine atrophy is so great that the possibility of correcting the situation is rather remote. Amenorrhea is associated with both constitutional and endocrine disorders. The endocrine glands involved are the adrenal, anterior pituitary, thyroid and ovary. *Hyper*activity of the adrenal and the thyroid and *hypo*activity of the pituitary and ovaries will usually result in oligomenorrhea or amenorrhea.

Some believe that a hyperfunction of the pituitary gland in secreting gonadotropic hormones, when not held in restraint by a normally functioning ovary, results in flooding the blood stream with the gonadotropic substance and creates the condition of amenorrhea associated with migraine, melancholia and other nervous manifestations; others

that a bleeding hormone secreted by the pituitary gland is the cause of menstruation. In amenorrhea and obesity we have *hypo*pituitarism characterized by adiposities in the hips, lower abdomen, upper arms, thighs and breasts, though normal hands, wrists, feet and ankles. This condition demands the ovarian hormones in conjunction with the pituitary-like preparations.

The rapid development of the breasts at puberty and their periodical congestion at the menstrual period is evidence of their relationship with ovarian activity. Lewis and Geschickter showed that estogenic substances injected into the breasts of male monkeys caused the monkeys to develop feminine-type breasts. LaCassagne, a leading investigator in this work, injecting male mice with large doses of estrogenic substance produced adenocarcinoma of the mammary glands. Cramer and Horning found that the administration of the thyrotropic hormone to female mice of a strain in which 50 per cent usually died of mammary carcinoma gave complete protection[9]. A number of investigators are contending there is a relationship between cancer and the estrogenic hormones, especially carcinoma of the breast and uterus.

It has been shown that hydrocarbons found in the coaltar derivatives are responsible for some cancers. It is believed there is a distant relationship between the sterols of the coaltar products and alcohol. It has also been demonstrated that these carcinogenic substances are chemically related to the sex hormones.

Then there is little doubt that cancer is of a hereditary disposition which may be awakened from a dormant state by the hormonal factor[10]. Emge advances a theory that the extent of hyperplasia is controlled by the same mechanism which controls cell growth, that an unusual hyperplasia denotes a defective cell-control mechanism.

Based on these assumptions and the experiments of Cramer and Horning, is it not logical to believe that a cell-control hormone may yet be found in the pituitary or thyroid gland? Possibly the vitamin group will also have something to offer.

Before the gonadotropic hormones had become generally accepted as therapeutic agents in functional menstrual disturbances, I had two cases which I shall recite to you. One, a white matron, 42, first seen in July, 1924, had had two normal confinements, 22 and 20 years before. Menstruation began at 14, always regular though rather profuse, the last three periods lasted 10 days or more, periods were accompanied with headache, pain in breasts and some discomfort in the lower pelvis. General examination was essentially negative. Wassermann was negative, hemoglobin 65, the uterus was retroverted and about twice the normal size. The cervix had an old bilateral scar though no erosion. A curetted specimen of endometrium taken for biopsy showed "hyperplasia of the endometrium." Under treatment (non-organotherapy) she improved, passed through a satisfactory menopause, only to have bleeding reappear after two years absence. Hysterectomy on September 23rd, 1933, and a biopsy of the uterus showed adenocarcinoma. The second case was that of a schoolgirl, 16, first seen in June, giving a history of menstruation at 13, always free, slight pain the day before, a year ago a hemorrhage such that her physician advised her to give up school. Several physicians tried numerous drugs and two D-and-C's without any beneficial results. I found out that one physician had given her a prolonged treatment of antuitrin S. Examination revealed nothing of importance. The patient's parents being desperate for something to be done, on October 5th, 1936, I did a curettement for a biopsy, and placed 35 mgms. of radium, screened in a brass capsule with a rubber covering, in the uterine canal for 48 hours. The local pathologist's report on the biopsy was "benign hyperplasia of endometrium". The patient did not menstruate for six months, when menstruation again started as profuse as ever. She then consulted another local surgeon who on May 20th, 1937, did a hysterectomy. A report on a biopsy of the uterus was as follows: "Tissue showed adenocarcinoma of the uterus, possibly arising in a deep endometrial implant." The question now arises in my mind whether or not excessive hyperplasia of the endometrium should be looked upon as a possible precancerous condition and not termed benign. I furthermore feel that there being no other morbid anatomy, an intensified treatment by progesterone should be resorted to before radium, x-ray or surgery.

Geist describes four groups of ovarian tumors[11]. Their importance in relationship with functional disturbances should not be overlooked. He groups them accordingly:

1. The granulosa-cell tumor that stores or produces the estrogenic hormone.
2. The theca-cell tumor arising from the forerunner of the theca interna cells, while biologically they are similar to the granulosa-cell tumor, he regards them as being distinct from this group.
3. The arrhenoblastoma which arises from male elements that have remained dormant in the ovary. These growths produce in their feminine host certain male characteristics as gait, voice and hair distribution; and menstruation ceases.
4. The dysgerminoma that arises from neuter cells

and has no pathological effect on its host.

Korenchevsky[12] suggests grouping all the hormones in two groups in order to simplify matters: 1. A purely male or female hormone; 2. Partially bisexual hormones.

He brings out the question whether or not sexual hormones possessing male properties can safely be used without producing masculinity and sex-preversion in the female host. Estrogen is recognized as a bisexual hormone while progesterone is a pure female hormone.

The enormous experimental dosage of estrogen given to mice by the various investigators is so out of proportion to the therapeutic dose recommended for man, I feel there is little danger, in skilled hands, of producing the unpleasant complications mentioned in this paper—which is a summary of conclusions and impressions gathered from a general survey of literature in this and the old world.

Summary

1. It is the activity of the gonadotropic hormones in the girl of the early teens that changes her psychic and physical being after the pattern of a matured woman.
2. The lessening of ovarian activity which removes the restraining influence on the pituitary gland causes the mechanism of the entire endocrine system to be thrown out of gear bringing on the symptoms of the menopause.
3. The shedding and reformation of the vaginal mucosa as the result of ovarian activity, is a defense against vaginal infection. With the cessation of this cyclical change, the mucosa undergoes atrophic changes resulting in the pathological condition found in senile vaginitis.
4. Dysmenorrhea usually is the result of a functional disorder. In only a small percentage of these cases is there a mal-position of the uterus or the pointed obstructive type of cervix.
5. Presacral nerve resection offers relief in the severe types of dysmenorrhea when other methods have failed.
6. Functional menorrhagia and amenorrhea apparently are the results of an ovarian hormonal imbalance although a bleeding hormone of the anterior pituitary gland has been suggested.
8. A carcinogenic factor in the sex hormones is apparent. Finding the cell-control hormone will clarify the cancer-producing factor.
9. By grouping the male and female hormones and the bisexual hormones organotherapy would be made more comprehensive.

Bibliography

1. DeGaris, Charles F.: The Autonomic Nervous System. *J. Assn. of Am. Med Colleges*: 13, 363-378, 1938.
2. Jacoby, Adolph and Rabbiner, Benjamin: *Am. J. Obst. & Gynec.* 31, 656, 1936.
3. Fluhmann, C. F.: *Endocrinology*. 23, 393, 1938.
4. Krohn, Leon; Lackner, Julius E. and Soskin, Samuel: *Am. J. Obst. & Gynec.* 34, 389, 1937.
5. Catte, G: *Lyon Med.* 144, 653-656, 1929.
6. Wilson, Leo; Kurzrok, Raphael: *Am. J. Obst. & Gynec.* 31, 924, 1936.
7. MacGregor, T. N.: *British Medical Journal*: 117, July 16, 1938.
8. Rock, John; Bartlett, Marshall K.: *Am. Jl. Obst & Gynec.* 31, 634, 1936.
9. Handley, W. Sampson: *British Medical Journal.* 113, July 16, 1938.
10. Emge, Ludwig A. and Murphy, K. M.: *Am. J. Obst. & Gynec.* 36, 750, 1938.
11. Geist, Samuel H.: *Am. J. Obst. & Gynec.* 30, 664, 1935.
12. Korenchevsky, V.: *British Medical Journal* 896, Nov. 6, 1937.

Puerperal Infection *vs* the General Practitioner (W. C. Roberts, Panama City, in *Jl. Fla. Med. Asso.*, Aug.)

Every doctor should have a well equipped obstetrical bag separate and apart from other equipment. Sterile sheets, towels, gauze and rubber gloves should be carried. Expensive autoclaves and sterilizers are not necessary. An efficient steam pressure sterilizer can be had at a very low cost. Every general practitioner should have one, also an adequate water sterilizer, even if it is only a simple water-boiling apparatus used in the kitchen.

It is necessary to use sterile linens only during the second and third stages of labor; therefore an adequate amount can easily be had for each delivery. A sterile delivery gown should be used by the doctor during the second and third stages for the same reason that other sterile linens are used. Sterile rubber gloves should be used in all contact procedures about the birth canal, but a sterile glove does not excuse a dirty hand. Use soap, water and a good scrub brush on your hands before putting on the sterile gloves. A doctor learns that all surgical instruments must be sterile before using; other materials used in the operative field also must be sterile.

A good cleansing enema should be given every patient at the onset of labor if time will permit. The anus should be thoroughly cleansed with soap and water and a good antiseptic applied thereto. Interference with the process of labor is justified only when definite indications *on the part of the mother or baby* demand it. Do not be too anxious to deliver the placenta; remember the one hour time of placental separation. All repair work should be done as though it were a major operation. If a laceration is big enough to see, it is big enough to repair. Catheterization calls for the best aseptic technique; catheterize before using forceps or doing version.

Pour antiseptic solution over the external gentalia before and after voiding or defecation. Use autoclaved sterile pads for the vulva. An ergot preparation should be given along with quinine as both are credited with bacteriostatic action in addition to their uterine stimulating effect. It is wise to place the patient in the Fowler position.

When the sweat *will* drip from the nose and chin, a protecting mask over the nose, mouth and chin. The doctor should set the example and insist that all other people who attend the puerperal woman do likewise. Any attendant having any respiratory infections, however mild, must wear a large mask over mouth, nose and chin.

Prostatectomy on a negro 110 years old, the patient alive and well 6 months afterward is reported in the Aug. 12th issue of the *Journal of the A.M.A.*

Malaria and its Treatment with Bismuth Violet

With a Reference to a Newer Treatment—Protozidin

CLAUD E. WATSON, M. D., Dallas, Texas

THE uncertainty of all treatment of malaria, and my having come to the conclusion by 1931 that we must find a drug which would certainly kill the parasite by direct action and at the same time be safe for the patient, prompted me to make the investigations here set forth. The extreme difficulty of completely eradicating the parasites had, or has since, been recorded by Krauss[1], Darling[2], Boyd[3] and others [4 5 6 7].

Before discussing this relatively new treatment it is well to consider briefly the causative factor and some of the peculiarities of the disease, with the hope of shedding light upon the reason for the long-recognized extreme resistance of malaria to treatment.

The plasmodium feeding upon red corpuscles and plasma chemicals liberates toxins deleterious to all tissues and especially disturbing to the functions of the nervous systems and allied endocrines (particularly adrenals and thyroid), producing many neuroses, psychoses and other disease syndromes. Further, it damages capillaries, tending to dilation and hemorrhage; also, massing of parasitized red cells produces thrombosis with infarction in brain, lung and heart, and various lesions in other important organs. The whole reticulo-endothelial system is greatly taxed, as is shown by relative or absolute monocytosis in nearly every blood examination.

There are four species of plasmodia—*vivax* (benign tertian), *malariae* (quartan), *falciparum* (malignant tertian) and *ovali*. Whether *P. ovali* is a separate organism is still a question. The benign tertian organism and, in less degree, the quartan, become ameboid some hours after sporulation and, when caught in capillaries, may escape into the circulation blood at various stages of development. For this reason the benign tertian and the quartan types are more easily detected and attacked than the malignant tertian, which is not ameboid. Long and repeated search is often required to find the malignant tertian parasites in peripheral blood a few hours after sporulation, even in severe or fatal cases. They are held in the capillaries and blood sinuses of internal structures, mainly the spleen and bone-marrow, by the phagocytic attraction (chemotaxis), *in situ*, of the endothelial lining cells[8], aided by vasomotor effects, until the next sporulation, when they and their toxins are passed out by expansion or vasodilation (or vaso-constriction perhaps) into the circulating blood. Some of these capillaries become thrombosed, and may be temporarily closed, holding the parasites for days, weeks, or even years—accounting for early relapses or chronic or latent infection, and healthy carriers; or they may be permanently closed causing fibrosis and organic disturbances.

The parasites thus held in capillaries and spaces, being deprived of sufficient hemoglobin, oxygen, glucose, salts etc. for rapid reproduction, become quiescent and highly resistant to therapeutic measures. I believe these may be considered as a sort of encysted from with protecting ectosarc, which, as with other protozoa, may become active at some later time when transplanted into a fertile field—in this case, the circulating blood. Henson[9], in discussing intracorpuscular conjugation, described "a resting form assuming a zygote stage, multiplying after periods of quiescence and only then giving clinical evidence of its presence." With or without conjugation, no doubt these dormant forms are the prime factor in the extreme resistance to treatment and the prolonged latency of malaria. A reason why these organisms are not attacked by wandering phagocytes might be that, being already held by endotheliocytes, further chemotaxis is not manifested.

I do not share the opinion of Hadfield and Garrod[10] regarding the dye storing and phagocytic power of sinus-lining, littoral, cells. They write: "It is important to realize that it is only the lining cells of the sinuses in the spleen, marrow, liver, lymph nodes, adrenals and hypophysis which have this property; the endothelial lining of the rest of the lymph-vascular system having little or no phagocytic power." Thomson and Robertson[11], Marchiafava and Cerletti (rev. by Anderson[12]) and many others, as well as my own study of malaria pathology, have shown that the capillaries of any tissue may be packed with parasites or pigment, with a definite peripheral arrangement, and that the lumen of many capillaries are dilated, the wall being weakened by the removal of endothelial cells which no doubt become wandering cells by phagocytic action toward passing plasmodia or pigment.

In Figure 1 is shown a section of brain tissue of a child whose capillaries (*a, b, c,*) contain para-

site-laden erythrocytes being held to the periphery of the lumen and another (*d*) ruptured and surrounded by extravasated red cells. These are but examples of numerous such areas found in this section. Nearly every capillary shows the peripheral arrangement of the infected erythrocytes, and there are many petechial hemorrhages. Also the local effect of bismuth violet on veins (discussed below) would indicate that endothelial lining cells quickly absorb dyes. Bismuth violet is non-escharatic and non-hygroscopic; yet, until we perfected a new chemical compound recently, it was the most effective sclerosing agent I[13] had found for treating varicose veins, using a special technique which would seem to be an effect on endothelial lining cells.

Just how many parasites are necessary to maintain latent infection? Surely not many more than the number of sporozoites required to infect a person by the bite of a mosquito—a number so infinitely small in comparison that one hesitates to think of the chances of *not* finding them by the usual examination of blood and tissue. And consider what might come from the occlusion of even a few capillaries along an important nerve trunk; or in one of the important brain centers, an endocrine gland or other vital organ! Is it any wonder that so many obscure ailments go undiagnosed, even at autopsy?

These resting forms may emerge in small numbers from time to time into the circulating blood and, being taken up by the phagocytic action of the monocytes, they produce no symptoms (healthy carriers), or again they may, after months or years be thrown out in numbers too great to be taken care of by the phagocytes, thereby causing an exacerbation resulting in numerous functional and organic disorders, or less often, chills and fever. These exacerbations are brought about by chemical changes in the blood and any condition or agent which causes excessive dilation or constriction of capillaries—shock, surgical operations, anesthesia, childbirth, trauma, fractures (especially of long bones), salvarsan, adrenalin, amyl nitrite, alcohol, exposure to the sun, x-rays, sudden extremes of temperature, fatigue, change of climate or altitude, fright, grief, worry, and so on.

I believe immunity to malaria may be summed up as follows: There is no immunity to the parasite *per se;* there may be immunity, or, to be more exact, increased tolerance, to the toxins produced by them. Tolerance may be inherited or it may be acquired. As in the case of other toxins, antibodies are produced which neutralize the malaria toxins to a greater or lesser degree, depending upon the individual's ability to furnish antigen. Tolerance is often increased by measures directed toward increasing antigen and stimulating body functions; *e. g.,* by the administration of arsenic or quinine, or change of climate. Tolerance for one species does not at all necessarily mean tolerance for another species; nor does tolerance for a certain strain of a species always bestow tolerance for another strain of the same species. Any tolerance may in time be lost. Further, I believe the apparent immunity of individuals, sometimes reported in heavily infected areas and seen in individuals with no parasites found in the peripheral blood after long-standing infection, is based too much on clinical manifestations and is partly a result of attenuation or slowed reproduction of the organisms by changes in blood chemistry, especially glucose, and an increase in the number and activity of the phagocytes—or reaction of the reticulo-endothelial system generally. Points in favor of this are the low blood sugar and monocytosis as common features of latent cases and that culture of plasmodia requires glucose medium.

So we may have hereditary infection with or without symptoms; subsequent infection with or without symptoms, depending upon the species or strain; and subsequent infection with symptoms, which later becomes symptomless by acquired tolerance to the toxins and passes on to latency.

A unique characteristic of plasmodial infection is periodicity. We may see quotidian, tertian, quartan, septan, decan, and fourteen-, twenty-one- and twenty-eight-day, and seasonal periodicity of *any symptom whatever.* I have seen only two cases exhibiting quintan periodicity—one a case of cerebral malaria; the other of the acute paroxysmal type. In chronic or latent cases these periodicities are sometimes long-drawn-out and often are not detected unless careful temperature charts are kept for some weeks, with care to record all subnormal temperatures as well as those above normal. Many of these show subnormal periodicity. Blood pictures taken daily at the same hour will show these same fluctuations (fig. 2, leucocytic phases *a, b, c*), though not always corresponding to the temperature variations in latent or chronic cases, especially during treatment.

From the foregoing account it would seem that destruction of all parasites would require a chemical of low toxicity, having high protozoacidal effect and strong penetrative power.

Treatment

For a number of years I have been keenly interested in the treatment of malaria. The greater portion of my practice has been devoted to the diagnosis and treatment of chronic diseases. Among these patients have been a large number

Top—A and B. Bottom—C and D

Fig. 1—Section of brain of a child showing the peripheral arrangement of parasitized red cells in capillaries (a) (b) and (c) and ruptured capillary (d) with extravasated blood cells in surrounding tissue.

of subjects of old malaria, often complicated by other affections, exhibiting a very wide range of symptoms. Many of these have been of chronic nature; others have shown the periodicities described, while a number have been acute exacerbations of latent infections. Many gave no history of chills and fever at any time. Others gave history of having had, months or years before, chills and fever for one, two, or three seasons, or perhaps almost continuously for many months, and this in spite of almost every kind of treatment, which nearly always included products of cinchona.

My treatment of these patients has varied considerably, using many different chemical agents, alone or combined. Each has been used in a sufficient number of cases to arrive at a fair conclusion as to their relative therapeutic values. Until bismuth violet was used, probably the most effective treatment included a series of intravenous injections of quinine and one of the arsenicals given over a period of four to eight weeks, often repeated two or three times yearly. Plasmochin and atabrine have been valuable aids in symptomatic treatment [illegible] return of symptoms and parasite [illegible] ved their discontinuance as to discount the claims that have been made for them. Small doses of quinine and methylene blue, in combination, have proved about equally as valuable in my cases. I believe the arsenicals act only by tonic effect.

Regardless of the plan of treatment or how long it was maintained, the disease has always shown a strong resistance, or a marked tendency to relapse. It caused the writer no little concern to see some of these patients show improvement within a short time and perhaps seem to recover entirely for the time, only to come back later with the same or other symptoms, and with demonstrable parasites, even when appropriate home treatment had been diligently carried out. This often occurred with many repetitions covering a period of two or three years.

This extreme resistance has long been noted by those practicing in heavily infected areas and has often been attributed to reinfection. No doubt reinfection was a predominating factor; but I have seen many patients who continued to relapse when reinfection was hardly possible, and notwithstanding that modern methods of treatment were used.

Wm. K. Anderson[34] has said that, like syphilis, malarial parasites "may remain alive in the spleen for long periods, resisting all treatment short of removal of the spleen." It must be remembered that symptoms resulting from permanent tissue damage are scarcely amenable to any treatment.

Early in 1931, I made a series of experiments with a number of chemicals, those commonly used and others, hoping to find one which would be directly lethal to the parasites and at the same time be safe for the patient. It was thought that perhaps this lethal action might be exerted equally upon the plasmodia and other protozoa closely related to them; or, at least, by this means we might arrive at a comparison between the protozoacidal effects of these different chemicals. *Paramecium*, and later *Amoeba proteus*, were selected for these experiments. Several chemicals were each diluted to a concentration equivalent to *twice* that which would be produced by the injection of an average dose into the blood stream of a 150-pound man. Each of these was mixed with an equal part of water containing a culture of the paramecium and observed from time to time to note the time at which the organisms were killed. The results obtained are shown in table 1.

From this it will be seen that quinine dihydrochloride was the only drug that even approached a rapid killing effect. If a concentration of 1/10,000 will not prevent infection—and we can get no higher by any method than 1/100,000, and this for only a short time—as recorded by Krauss[35], then it is not likely that all plasmodia would be killed by quinine and certainly not by direct action. Krauss also states that 90 per cent of quinine injected intravenously will disappear from the plasma in one minute.

A little later I came into possession of some bismuth violet, then a new antiseptic, the chemical name of which is hexamethyl-triamintriphenyl-carbinol-chloride-bismuth. Following the custom of testing out any new chemical upon *Paramecium* (later *Amoeba proteus*), I made a preliminary test, using a weak solution of the dye. The organisms were killed almost instantly. They changed to ameoboid form and movement shortly before death and quickly became heavily stained. Some more accurate dilutions were made and the strength of the solution and the average time necessary to kill them were determined. Tabulations are shown in tables 2 and 3.

It is interesting to note the difference in resisting power exhibited by *Paramecium* and *Amoeba proteus*. Tables 2 and 3 show that the amoeba is undoubtedly the less resistant of the two. This might be accounted for by the relative position in the scale of animal life to which each belongs.

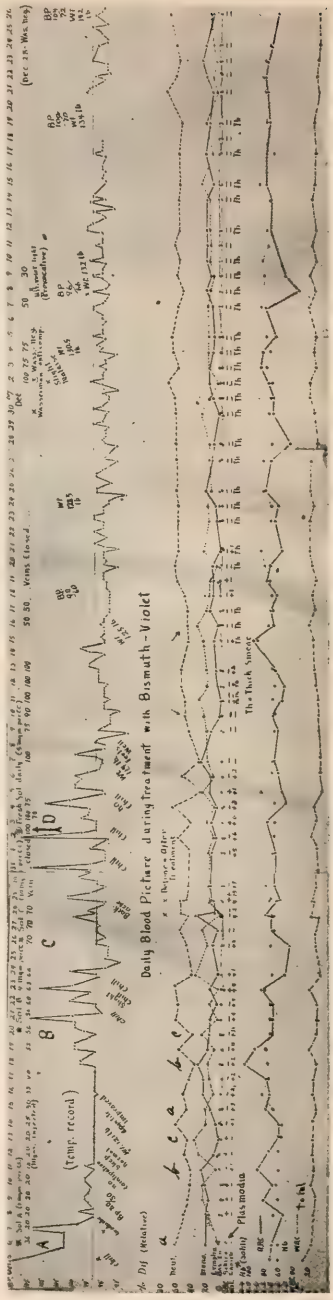


FIG. 2. *Case* 1. Chart showing briefed clinical record and blood picture curve (made 11:00 a. m. daily). A, B, and C: solutions exposed to light. B: beginning of injection of fresh solution. NOTE: leucocytic phases, neutrophilic (a), monocytic (b), lymphocytic (c) and leucocytic "levelling" after "D".

Applying this hypothesis to the plasmodia might point to a solution of the relative difference in resistance to treatment, so long known to exist, between the species and forms. The forms, which, in their sexual characteristics, approach the metazoa are considered the more resistant.

It was learned from previous investigations[16] that bismuth violet is of low toxicity. Rabbits had easily tolerated as much as 10 milligrams of the dye per kilogram of body weight.

Inasmuch as bismuth violet was not yet available for intravenous use and no data relative to dosage, preparation and technique of injection were to be had, it was decided to begin with the injection of 0.123 c. c. per pound body weight, of a solution made by mixing 0.5 gm. of the crystals in 100 c. c. triple-distilled water. This was calculated to give approximately a concentration of 1/200,000 in the blood stream. The first injection, given to one of my assistants, was followed immediately by headache and general aching, but no serious consequence came of it. Further investigation revealed that a small portion of the chemical was not water-soluble and that I had injected a solution containing crystals. It was also learned later that the solution was affected by exposure to light, accounting for relapses. (See table 3-B and fig. 2-A, B, C). Further perfection of the dye and many changes in preparation, dosage and technique followed, but I shall relate here only the procedure that has proved to be the most satisfactory to date. (As of March, 1939).

1. Preparation of solution: (Made and kept in subdued light)

   (a) Grind 0.75 gm. crystals into 50 c. c. triple-distilled water in mortar.

   (b) Filter to remove dust and any undissolved crystals (three times through No. 615 filter paper will suffice).

   (c) Make fresh solution daily. Bismuth violet crystals for intravenous use are now being perfected by the manufacturers of the drug.

2. Dosage: 0.04 to 0.06 c. c. solution per pound body weight (depending upon the gravity of the case). Good dosage is evidenced by purple color of skin lasting 5 to 15 minutes after injection.

3. Frequency of injection: (limited mainly on account of veins)

   (a) In acute, or severe chronic cases, one or or more injections daily until improvement is noted, then every other day until symptoms subside.

   (b) In chronic cases injection every other day for four to six weeks.

   (c) Repeat series of 6 to 12 injections every three to six months (more frequently if symptoms recur) for one or two years.

4. Technique:

   (a) Patient reclining, select large vein. Since 1934, for all intravenous medication in patients whose veins are small or have become constricted, I have used the axillary vein, in or just below the axillary fossa. It is made accessible by extending the arm well above the head and pressure applied deep in the fossa, with patient in slight Trendelenburg position.

   (b) Injection: Fill eccentric-tip Luer syringe with desired amount of solution; attach observation extension tip with needle to syringe, leaving air in tip. As vein is entered, blood is withdrawn and air rises above solution in syringe (otherwise blood is obscured by the deep color of the solution). The rate of injection is controlled somewhat by the size of the needle: 23-gage is preferable. Injection completed, apply compress and elevate arm for a minute to empty vein, prevent bleeding and allow vein to be washed out by bood. If the solution should be accidentally injected into the perivascular space, the patient experiences a sharp stinging sensation at the site for 20 to 30 seconds. Should the vein become constricted during injection, a pulling or filling-up sensation is felt, sometimes with dull aching, lasting a few minutes. Usually there is little subsequent discomfort. In either case, injection should be stopped, implements cleaned and injection made in another vein. When injected perivascularly, bismuth violet does not produce severe local reactions. Constriction may be temporary or permanent depending upon the size of the vein and the number of times injected. *This is a true constriction,* with little or no thrombosis.

5. Sterilization:

   (a) Solution: Bismuth violet solution is sterile of itself, inhibiting growth of bacteria, with the exception of *B. pyocyaneus,* by dilutions ranging from 1/10,000 to 1/1,000,000,000[17]. Although the solution (or crystals) may be kept in the autoclave at 15-lbs. pressure for 15 minutes without destroying its potency, I have never once heated it.

   (b) Utensils: These may be sterilized as usual, but I have not found it necessary. After injection these are washed with tap water, alcohol and distilled water in order given; and, immediately before the next injection, they are rinsed with distilled water. The observation tip may be wiped out with a small cotton swab after each injection to maintain visibility. As a routine, needle points are honed each day to

lessen pain and damage to vein and adjacent structures. Irritation of the nerves is sometimes alone responsible for constriction.

Reaction: There have never been any systemic reactions. Occasionally I have observed a slight increase in respiration during injection, but the same reaction has been observed following the insertion of the needle without injection. Three patients complained of aching, malaise and headache an hour or so after an injection, but they did not have these symptoms from previous or subsequent injections. One patient had light chill following his first injection and refused to continue treatment. His symptoms had followed the prodromal course of acute malaria for the few days previous, and he continued having chills, I am told, for some time afterward . It was believed to have been an ordinary malarial paroxysm. A sense of well-being is commonly experienced within a few minutes or hours after injection. The purple or livid color of the skin after injection is not to be interpreted as a reaction. There has been no evidence of cumulative effect.

Additional Treatment

This was mainly symptomatic, directed toward temporarily balancing the sympathetic and parasympathetic systems and body chemistry, which are nearly always materially upset. Occasionally when veins were inadequate for bismuth violet injections, atabrine, plasmochin or quinine and methylene blue were given during and in the interim between series of injections. Most of the patients, however, were given bismuth violet only.

Results

It would be difficult to tabulate the detailed results obtained by intravenous bismuth violet therapy in malaria. In the early days of its use, when nothing was definitely known regarding dosage or the number of injections required, a few patients were given what is now known to be insufficient dosage. Others, relieved of symptoms by two or three injections, did not continue with treatment. Some of these did not require further treatment, while others returned at intervals for a few injections to relieve recurring symptoms. Return of symptoms has occurred where reinfection could not be ruled out. Complications by other diseases were not uncommon. Dosage was changed from time to time. Acute infections and exacerbations were sometimes hard to differentiate.

Also, considering the inaccessibility of plasmodia held in closed capillaries, we come to realize the prime reason for the great difficulty in completely eradicating the parasites from the host by any treatment, also the uncertainty of finding by one or two examinations of peripheral blood when, or if, this has been accomplished. The cessation of symptoms with one or two negative blood smears is by no means positive proof that all parasites have been killed; moreover, the gravity of a case may not be measured by the number of parasites found at a given examination of the peripheral blood. Many cases of malaria have been first diagnosed at autopsy. The ultimate test of any new therapeutic measure lies in its thorough investigation by controlled experiments by investigators who have adequate facilities. We who are in private practice can not always submit detailed statistics, and must deal in generalities and base our conclusions to a great extent upon conservative estimates.

Nearly 8000 injections were given in more than 450 cases. Results will closely parallel those obtained in 86 cases reported Nov. 18th, 1932 (table 4), except that the percentage of Class D (treatment unlimited) increased during the years with improvement in the dye and technique.

Acute cases: Symptoms relieved in two to six days; clinical cures, 100%; relapses, none; fatalities, none.

Chronic and *latent* cases: Symptoms relieved in two hours to 30 days (average eight days); clinical cures, 85 to 90%; relapses, 25 to 30% (with repeated series of treatments—10 to 15%); clinical improvement, 95%; fatalities, none.

TABLE 4

Summary of patients treated with bismuth-violet (1932)*

Class		
A	Total No. injected	86
B	treatment limited acct. leaving town	16
C	treatment limited acct. of veins	10
D	treatment unlimited	60

CLASS C—10 CASES

Treatment limited on account of veins

No improvement	3
Only moderate improvement	1
Improvement with relapse	3
Abatement of symptoms with relapse	3

CLASS D—60 CASES

Treatment unlimited

No improvement	0
Moderate improvement only (Symptoms accounted for by abdominal adhesions and other affections)	4
Symptoms abated with relapse	1
Symptoms abated with no relapse	55

Since these cases may be fairly accurately classified into syndromes of various systems—cerebrospinal, gastrointestinal, special sense organs, cardiovascular, etc.; and since many have complicated or been complicated by tuberculosis, influenza, typhoid, pellagra and other diseases (which likewise

*Reported at Joint Session of National Malaria Committee and American Society of Tropical Medicine, Birmingham, Ala., November 15th, 1932.

responded to the treatment with astonishing rapidity), I shall discuss them more at length in other papers with headings relative to these various syndromes and complications, which will appear in the literature from time to time beginning soon.

The blood pictures have shown great improvement in all cases in which blood examinations were made after treatment. Rapid diminution of parasites was seen. There was a leveling out of the blood picture, which I believe to be of more diagnostic significance than the search for plasmodia, especially when parasites are not found. Only by carefully doing a complete count and search, at the same hour or hours daily over a period of days or weeks, carefully differentiating lymphocytes and monocytes, are we able to obtain reliable information on the progress of malaria. For the last 15 years I[18] have greatly relied upon the daily blood picture in studying chronic or latent types. Note (fig. 1) the characteristic leucocytic phases (described by Schilling[19]) at *A & B*: Neutrophilic, *a*; monocytic, *b*; and lymphocytic, *c*; even in the apyretic periods and when schizonts were not found and also, the immediate and continued change or leucocytic "leveling" (after *D*) when injection of fresh solution was begun, and parasites were no longer found.

The strong lethal action of bismuth violet solution on plasmodia may be largely owing to its power of deep penetration. Investigation[20] has shown that it quickly diffuses with protoplasm, albumin and other colloids. Localized defense reaction areas, such as pimples and scratches on the skin, are seen to take on a deep purple hue, sometimes before injection is finished and always before the skin generally has changed in color. This color persists in these areas for some hours after the skin has cleared, indicating that the dye has penetrated the fibrin defense barrier described by Menkin[21] in 1935. Diseases requiring penetrative treatment, such as Vincent's infection, impetigo and chancroid (Watson[22]), have readily responded to bismuth violet applications. The prolonged lethal action on *Paramecium* of the blood following injection (table 2-B) would indicate that ample time for penetration of hidden plasmodia might have elapsed.

Also, it is natural to suppose that bismuth violet would act, as do other dyes, by stimulation of the reticulo-endothelial system, which is the principal defense agent in the body, particularly with regard to protozoal infection. This might account for the beneficial results sometimes obtained by small doses of methylene blue and quinine. The property of these cells of absorbing and gradually liberating substances, as dyes, might account for the prolonged action of blood serum following injection of bismuth violet (table 2-B). Care must be taken not to so overdose as to produce reticulo-endothelial blockage (described by Hadfield and Garrod[23], 1938).

During the past year I have been fortunate in having O. O. Cook, Ph. G., chemist, in my laboratory. He has worked out a *stable* solution of bismuth violet, 20 mgm. per c. c., without materially changing its protozoacidal effect. With this solution the volume dosage has been reduced to 1 to 3 c. c. Apparently this has about solved the problem of veins and dosage, as well as obviating the necessity of preparing the solution each day. Further study will be required to determine these definitely.

Also we have perfected a new stable chemical compound of low toxicity having a much greater protozoacidal power than bismuth violet, and requiring much smaller volume dosage, which we have named *protozidin*. Some preliminary pharmacological studies of this chemical were made, and since March of this year more than 50 patients have been treated with it. These included some with affections other than malaria—streptococcic septicemia, amebic dysentery, gonorrhea and others. The results have been gratifying, symptomatic relief having been obtained in most cases within a few hours. A preliminary report on the use of protozidin will appear in the literature in the near future.

The following case histories are condensed:

Case 1—*Malaria cachexia, provocative proxysmal* (fig. 2). Farmer, 53, from Southern Arkansas, seen Oct. 5th, 1931, complaint, chills and fever. Born in Washington County, Texas; infancy and early childhood, healthy; at 8, had chills and fever. Aug. 1925 began having dumb chills which continued 3 months in spite of taking quinine, tonics etc. In 1926, relapse every 28 days. In 1927, moved up into the hills for 60 days, felt better until Sept., when, back in lowland, he had chills for 2 months. After this, though he never felt well, he was free from chills until March, 1931, when he had chills, influenza and bronchopneumonia. He was unable to walk until June. On Aug. 6th, he developed a chancre, also began having chills again (tertian) which lasted 3 weeks. In Sept. came to Dallas for anti-syphilitic treatment. No chills for 2 weeks. Consulted a urologist, who gave him 0.3 gm. neoarsphenamine. This was followed by a chill and fever (provocative.) Referred to me.

Examination: Wt. 121, ht. 69½, emaciated and debilitated, skin dry, yellow, pigmented areas over body. T. 104, b. p. 80-60 sitting; hearing

impaired; tongue thick, indented, bluish, furred; gross pyorrhea. Chest flat, increased resonance above splenic area; liver and spleen moderately enlarged; mentality depressed.

Blood contained *P. falciparum* crescents.

Diagnosis: Malarial cachexia, provocative paroxysmal.

Treatment: Bismuth violet intravenously as shown in figure 2.

Results: Although relapses occurred for three weeks as result of not using fresh solution (first case using b. v.), his general condition improved from the third day; symptoms abated and parasites disappeared from smears soon after injections of fresh solutions (D) were begun.

Note: Wassermann, Nov. 30th, anticomplementary; Dec. 2nd and 28th, neg.

Patient, seen Oct. 21st, 1933, said his health had been good 2 years. Aug., 1933, fever 3 days; 14 days later, 3 days of fever; 7 days later, bloody diarrhea for 7 days, changed to vomiting for 2 days, followed by headaches. Skin dry, wt. 126, blood smear showed *P. vivax*. (On account of social complications he was not treated again by me).

Case 2—*Acute malaria*. On Aug. 11th, 1932, a man, 21, health good until 1 week ago. Since then lassitude, depression and aching followed by chills and fever every other day with increasing intensity.

Blood: *P. falciparum*.

Treatment: Bismuth violet injections Aug 11th, and 12th, 15 c. c.; 13th, 13 c. c.; 15th, 17th, 20th and 22nd, 15 c. c.

Results: Had no more chills; symptoms relieved in 24 hours., recovery complete in 5 days. No relapse.

Case 3—*Latent malarial headache*. March 19th, 1934. 11-year-old boy with "headaches, no pep.", was jaundiced at birth and for 5 weeks following: July and Aug. 1930 chills, fever and vomiting 3 or 4 weeks (tertian periodicity); treated with quinine for several months. The following spring, (1931), loss of weight, malaise. Fall of 1931, headaches, photophobia, dizziness, numbness of feet and hands. Since then headaches have continued intermittently, rarely without them, but more severe in spring and fall of each year. "Can't stand hot sun." Condition grew worse each year. Occasional constipation. Past few weeks headaches more severe and more frequent, nearly every day. Often had to be dismissed from school on this account. Headaches have been in trigeminal area, bilateral, most often supraorbital, usually in forenoon, precipitated or aggravated by fatigue or exposure to heat. T. irregular, 97.6 to 100.2; mental and nervous neg. except for apathy during attacks.

Physical examination: not remarkable, T. 98.6, hgb. 69% (Sahli); red cells 3,340,000; whites, 7,450—neut. 56.5 (m. 0, j. 0, st. 1, seg. 55.5); lymph. 20.5 (s. 20.5, l. 0); mono. 19.5 (young 16.5, hyaline 2, pigmented 0.5, deg. 0.5); eos. 3.

Monocytic phase, high relative and absolute monocytic.

Pos. for *P. falciparum*.

Diagnosis: Latent malaria (M. T.)

Treatment: Saturated solution bismuth violet intravenously, 15 injections, one every 2nd day. Results: Headache stopped first day. Mar. 30th, headache 1 hour, otherwise entirely relieved, even with unusual exercise. No relapse.

Case 4—*Blackwater fever*. Jan. 21st, 1934; married woman, 45; complaint: fever, malaise, urine dark.

Some ten days ago she went on an outing in So. Texas; for past 3 days has had general ill feeling, depression, nausea, cough, weakness, jaundice, aching. Fever increased each afternoon, no chill. Has noticed urine was very dark and intensity has increased each day.

Wt. 165 lbs.; few medium, moist rales, both sides of chest; icterus.

Urine (voided) very dark and turbid, strongly acid, has trace of albumin, many high columnar cells, few squamous, few wbc. and rbc.

Jan. 22nd, 11:30 a. m., T. 99, hgb. 72% (Sahli), red cells 2,840,000; whites 4,550—neut. 39.5 (m. 0, j. 0, st. 2, seg. 37.5); lympho. 35 (s. 33, l. 1.5, Reider 0.5); mono. 21 (young 9, hyaline 1.5, pig. 0, deg. 10.5); baso, 2.5; eos. 2.

Monocytic-lymphocytic phase.

Pos. for *P. falciparum*.

Same day, 3:20 p. m., T. 100.6, white cells 4, 260—neut. 33.5 (m. 0, j. 0, st. 0, seg. 33.5); lympho. 54 (s. 51.6, l. 1, Reider 1.5); mono. 12 (young 12); baso. 0; eos. 0.5.

Lymphocytic phase.

Pos. for *P. falciparum*.

Treatment: Sat. sol. bismuth violet intravenously, Jan 21st to 24th—10 c. c. daily; Jan. 26th to Feb. 16th, injections thrice weekly, ave. 11 c. c., (correct calculated dose for her wt. of 165 lbs.—20 c. c.) Results: Jan. 23rd, (2nd day) feeling well, sitting up; 5th day came to office, apparently recovered. Urine: trace hemoglobin and bile. May 6th, 1934, no relapse, health good. March, 1939, reports continued good health.

Case 5—*Latent malignant tertian, chronic course*. Oct. 26th, 1935, machinist 63. Health good all his life until about 18 months ago. For some months previously he had been worried over sickness in the family and loss of wife. Following this

his health began to fail. Is now without appetite, has lost 36 lbs., sweats, can't sleep, is depressed, has general aches forced to quit work four months ago. Was given hydrochloric acid intravenously, and other treatment by his physician. A complete examination was made by a reputable clinic. No diagnosis was made, and he was simply "advised to eat more."

Blood: Secondary anemia, leucopenia with relative monocytosis; *P. falciparum* (a few crescents).

Treatment: Bismuth violet intravenously thrice weekly for seven weeks.

Progress: Oct. 27th, (2nd day), better, 3rd day he relished a steak dinner, 7th day, had gained 4 lbs., 14th day symptoms subsided entirely. In 7 weeks had regained health and former weight. Returned to work Jan. 1936, feeling better than he had for many years. Oct. 1936 was given four weekly injections; Feb. and March 1937, six weekly injections. Jan. 1939, has had continued good health since first treatments.

Remarks: This is considered an exacerbation of latent malaria provoked by emotional strain.

Case 6—*Acute benign tertian.* Oct. 20th, 1933, fireman, 42, with a history of malaria at 15 yrs., when taking quinine was followed by rash. Health good since, except for influenza in Oct. 1932.

Seven days ago at 3:00 p. m. began suddenly to feel cold and to shake, at 6:00 had fever. Since that time has had chills and fever every other day with increasing intensity. Yesterday T. was 106.2, with delirium. Took castor oil, orange juice and buttermilk. Was advised by his physician, not to take quinine on account of idiosyncrasy. Referred.

Wt. 196, T. 98.2 at 1:30 p. m., red cells 3,650,000, hgb. 78% (Sahli), whites 7,500— neut. 62.5 (m. 0, j. 0, st. 6.5, seg. 65); lymph. 17.5 (s. 16.5, l. 0.5, Reider 0.5); mono. 19 (hyaline 16.5, young 0, pig. 0.5, deg. 2); baso. 0; eos. 1.

Monocytic phase

Many *P. vivax.*

Oct. 21st., T. 104 (2nd paroxysm), white cells 10,250—neut. 80 (m. 0, j. 1, st. 1, seg. 72); lymph. 13.5(s. 13, l. 0.5); mono. 6.5 (young 4.5, hyaline 1, pig. 0, deg. 1); baso. 0; eos. 0.

Neutrophilic phase.

Pos. *P. vivax* (schiz. and gametes).

Treatment: Bismuth violet intravenously (500 mg. to 100 c. c. water) Oct. 20th, 15 c. c.; Oct. 21st, 2 inj., 12 c. c. each; Oct. 22nd, 15 c. c.; Oct. 24th, 26th, 28th and Nov 1st, 12 c. c. (Dosage for one weighing 196 lbs., 24 c. c.)

Progress: Oct. 21st, (2nd day) chill in office, lighter, no delirium; 3rd day chill, less severe, convalescence rapid. No relapse. Sept. 1938, continued good health.

Remarks: Dosage in this case was low for body weight on account of small veins. Although he had no relapse, he was given 8 injections in July, 1934, and 6 injections in March, 1935. April, 1937, reports continued good health. Sept., 1938, no relapse.

Case 7—*Latent malarial stupor.* Sept. 2nd, 1932, robust appearing pre-medical student, 20, drowsy and inclined to stupor. At 9 and 10 years of age, bilious attacks; past 4 years, health poor, "no pep," dizziness, poor concentration and memory, all worse in summer. Three years ago, tonsillectomy to relieve bilious attacks and sacral backache. (Had never had throat trouble). Made poor grades in college, worse each year, was obliged to drop some subjects. No bad habits, no venereal disease. Feb. 1932 began (as usual each spring) feeling languid, with dizziness, better at times but gradually worse, lost 20 lbs during last six months. Past month, no appetite. One month ago, while working with thresher (farm) became very hot and few days later began to feel very depressed, with weakness, dizziness, better at times—7 days ago had cyst removed from hand. Today became drowsy and confused. Was thought by strangers to be alcoholic. Brought into my office in wheel chair in profound stupor. Previous examinations had not revealed the cause.

At 4 p. m. T. 98.8, red cells 2,950,000, hgb. 86% (Sahli), whites 7,450—neut 67 (m. 0, j. 0, st. 5.5, seg. 61.5); lymph. 16 (s. 14, l. 2); mon. 16 (young 13, hyaline 1, pig. 0, deg. 2); baso. 0; eos. 1; Turk's irr. 2.

Monocytic phase.

Many *P. falciparum.*

Diagnosis: Latent exacerbation, malarial stupor (asthenic type, adreno-sympathetic strain).

Treatment: Bismuth violet intravenously, Aug. 2nd to 12th—15 c. c. daily. Advised to repeat series, but did not return.

Results: Aug. 3rd, (2nd day,) he walked into my office, mentally alert and feeling well. He continued to improve. The following year in college made straight A grades. Aug. 1933 had short return of slight malaise, which did not amount to much.

Case 8 *Malarial "rheumatism."* July 10th, 1938, band director, 47, "rheumatism" in knees.

Chronic bladder trouble since early manhood, otherwise healthy. About one year ago knees became swollen and stiff and so painful as to incapacitate him for some weeks. A week ago this recurred. He walked into the office with great difficulty aided by two canes, and had to be assisted onto the examining table. The right knee was swollen to twice normal size; the left to a little less. Both were painful and limited in motion, but not very tender to touch. The edema was

elastic with very little color—faint pink. No fluid could be withdrawn by aspiration. Temperature showed tertian periodicity (98-99.8.)

July 11th, 10:30 a. m., T. 98.8, red cells 3,400, 000, hgb. 92% (Sahli), whites 15,350—neut. 64 (m. 0, j. 0, st. 1, seg. 63); lymph. 23 (l. 8, s. 15); mono. 10 (hyaline 1, young 9, pig. 0, deg. 0—Abs. mono. 1,535); baso. 0; eos. 3.

High absolute monocytosis.

Pos. *P. falciparum.*

Urine (voided), strongly acid, alb. 1-plus, heavy sediment of leucocytes and staphylococci.

Diagnosis: Malarial arthritis or circumscribed edema.

Treatment: Only bismuth violet, 6 daily injections, then 4 injections on alternate days.

Results: Pain relieved within 4 hours after first injection; 24 hours after treatment swelling was practically gone from left knee; right, greatly reduced; walking with only one cane. Second day walked with little difficulty without cane. Very slight swelling right knee only, joints flexible. Third day—normal. April 15th, 1939, no relapse. Referred to a urologist because of the cystitis.

Remarks: Believed to be localized edema, due to parasympathetic irritation, fairly common among my cases; however there is sometimes, also a synovial involvement.

Conclusion

Malaria is not confined to tropical or even subtropical areas. It may be found wherever there are Anopheles mosquitoes and malaria carriers. As shown by Stitt[24], malaria is found everywhere in the United States (excepting in two narrow strips high in the Rocky Mountains), and in parts of Canada the disease has occurred rather extensively.

Explanation of low figures for areas of higher altitude and latitude lies in the reluctance of practitioners in general to report malaria cases, in their failure to recognize malaria in its various forms other than chills and fever, and in their placing too much reliance on negative laboratory findings and the antiquated and uncertain quinine test.

Malaria survey reports are too often based on clinical evidence and an insufficient number of repeated blood examinations on individuals.

Altitude and climate have much to do with attenuation and tolerance, so that even acute infections are often masked under the symptoms of other diseases. Often we have seen patients, who were relieved of chills and fever by moving to higher altitude or going north, but who continued as healthy carriers; or, who suffered from time to time, vague symptoms never accounted for. Also I have had patients coming from these reputedly non-malarious areas develop acute exacerbations before the lapse of enough time for manifestations from infection here, whose long-standing obscure symptoms were found to be of malarial origin and relieved by anti-malarial therapy.

I am now convinced, as I shall elaborate[25] soon, that it can be proven that many disease conditions of which the basic etiology is not now understood, have malaria as their chief underlying cause. Among these are pellagra, allergy, migraine, Raynaud's phenomenon, influenza, certain blood dyscrasias, malignancies, pneumonias, neuroses and psychoses. To see the justification for this assertion, one has to be cognizant of the results of most recent investigations into the etiology of these entities, and he must *know* malaria in its many ramifications—its mimicry, insidiousness, prevalence and hereditary peculiarities; the myriad organic disturbances of which it is capable, its constant destructive action on the reticulo-endothelial and vegetative nervous systems, body chemistry and endocrines.

Summary

1. It is obvious that no drug or combination of drugs in common use for that purpose can be relied upon to kill all plasmodia in an infected person, and that, until we have found one which is safe and directly destructive to the different forms of the parasite we will not have successfully met the situation.
2. By a comparative test of the action of several of the most commonly used chemical agents upon other protozoa I have found that only quinine even approached a rapid killing effect.
3. Bismuth violet solution killed *Paramecium* in the dilutions and time periods: 1/200,000—5.5 min.; 1/20,000,000—20 min.; 1/2,000,000,000—31 min.; blood serum 5 min. after injection of 1 mgm. per kgm. body weight—7 min.; serum from same patient 17 hours later—15 min. (normal serum—55 min.). *Amoeba proteus* showed even less resistance, being killed by a dilution of 1/200,000 in 30 sec.
4. Bismuth violet is non-toxic, but the intravenous dosage has been limited in some cases by its irritative action upon the veins. A dosage of 0.04-0.06 c. c. of a 0.15-per cent aqueous solution per kgm. body weight has proved the most satisfactory in destroying plasmodia without injuring the veins. (A more concentrated solution is now being tried).
5. Nearly 8000 injections [illegible] than 450 cases. Results conservatively estimated: *Acute* cases: Symptoms relieved—two hours to six days; clinical cures in all cases; relapses,

none; fatalities, none. *Chronic* and *latent* cases: Symptoms relieved—2 to 36 days (average 8 days); clinical cures, 85 to 90 per cent; relapses, 25 to 30 per cent; with repeated treatment series, 10 to 15 per cent; clinical improvement, 95 per cent; fatalities, none.

6. A new chemical compound has been perfected and studies on it are now being made.
7. The writer believes that latent and chronic malaria are more prevalent and widely distributed than is commonly believed, and that certain diseases of now unknown etiology are to a great degree caused by malaria.

—4515 Worth Street.

References

1. Krauss Wm.: Relapses in Malaria, *Jl. Tenn. Med. Assn.* 19:43-45, June, 1926.
2. Darling, S. T.: Medical Researches in Malaria, *So. Med. Jl.* 18:440-444, June, 1925.
3. Boyd, M. F.: Preventive Medicine, 4th Ed. *W. B. Saunders Co.* 1932.
4. Fletcher, Wm., and Kanagaryer: Plasmochin in the Treatment of Malaria, *Indian Med. Gazette*, 16:238-240, Sept., 1927.
5. Anderson, W. K.: *Malarial Psychoses & Neuroses*, Oxford Univ. Press, 1927.
6. League of Nations: Third General Report of the Malarial Commission on the Therapeutics of Malaria, *Bulletin*, 1933.
7. Sollman, T.: *Pharmacology*, 3rd Ed. W. B. Saunders Co. 1927.
8. Thomson, J. G., and Robertson, A.: *Protozoology*, W. Wood & Co., 1929.
9. Henson, G. E.: *Malaria*, C. V. Mosby Co. 1913.
10. Hadfield, G., and Garrod, L. P.: *Recent Advances in Pathology*, 3rd Ed. P. Blakiston's Son & Co. 1935.
11. Thompson & Robertson[5]. 12. Anderson, Wm. K.[2].
13. Watson, C. E.: *Varicose Veins of the Lower Extremities*. Read before Lamar County Med. Soc., Paris, Texas, Nov. 1st, 1934.
15. Krauss, Wm.[1]. 14. Anderson, Wm. K.[6]
16. 17. Wilkinson, G. R. and Barksdale, I. S.: Effect of Bismuth Violet on Certain Pathogenic Organisms, Prel. Report, *So. Med. Jl.* 12:295-298, June, 1928.
18. Watson, C. E.: *Some Fundamentals of the Blood Picture*. Read before Dallas County Med. Soc., Dallas, Texas, Oct. 12th, 1930.
19. Schilling, V.: *The Blood Picture*, 7th and 8th Rev. Ed., The C. V. Mosby Co., 1929.
20. Barksdale, I. S., Turner, N. E., and Bates, R. L.: The Newer Management of the Diphtheria Carrier, *So. Med. Jl* 28:373, Apr., 1935. Discussion by Watson, C. E.
21. Menkin, V., *Am. Jl. Med. Sci.* 190:583, 1935.
22. Watson, C. E.: Bismuth Violet for Chancroids with a Reference to its Use in Malaria, *So. Med & Surg.* 79:18 Nov., 1935. 23. Hadfield and Garrod[10].
24. Stitt, E. R.: *Diagnosis & Treatment of Tropical Diseases*, 5th Edi., P. Blakiston's Sons & Co. 1929.
25. Watson, C. E.: Malaria as Basic Factor in Many Diseases and Entities now of Doubtful Origin. Paper now in preparation for publication.

This Research has been presented in parts from time to time as follows:
1) Dallas County Medical Society, Dallas; June 26th, 1933; 2) Bexar County Medical Society, San Antonio, Nov. 5th, 1934; 3) Joint Session of the National Malaria Committee & American Society of Tropical Medicine, Birmingham, Nov. 18th, 1932, and 4) Wood County Medical Society, Mineola, Texas, Sept. 15th, 1936.

Treatment of Bright's Disease

(J. L. Miller, Chicago, in *Miss. Val. Med. Jl.*, July

In acute Bright's disease rest in bed is essential in order to prevent chilling, keep comfortably warm but insure plenty of fresh air. Contacts with persons suffering from upper respiratory tract infections should be prevented.

The absolute milk diet has been abandoned. It has an excess of sodium chloride. Give a general diet of easily digested food free from sodium chloride; fresh meats in moderate amounts, also eggs, cereals, mashed root vegetables, easily digested cooked green vegetables, fruits and desserts may be given freely. This disease is common in children and fortunately they love sweets. Water or juices should be given in amounts adequate to quench thirst. The most important dietary precaution is to restrict salt and to substitute for it potassium chloride. It is not necessary to carry this to the point of using salt-free bread and butter. Each morning the patient is given a salt cellar containing at least 5 grams of potassium chloride to use on his food and must use this whole amount daily. If on this regimen diuresis does not occur, it is highly probable that the edema is not due to sodium retention, but rather to low serum albumin for which treatment is of little avail. After the lapse of 4 or 5 days it is advisable to add daily 2 or 3 grams of sodium chloride to the potassium chloride, to prevent a too great depletion of sodium.

If restriction of sodium fails to relieve the edema, a hypertonic glucose solution given intravenously may be tried. To attempt to relieve edema by catharsis or sweets depletes the patient and increases his discomfort. The excessive fluids in the tissues must be eliminated through the kidneys.

Bleeding is not advisable and may be harmful, as it still further reduces the serum albumin.

Diuretics, either of the alkaline or theobromine type, are useless. Mercurial diuretics are dangerous.

All of these patients are anemic, iron should be supplied.

Rarely is a patient with uremia markedly edematous; in fact, he may be dehydrated. The lack of edema is probably due to deficiency of sodium. There may also be a loss of calcium which loss is responsible at times for the muscular twitching—one of the early signs of uremia. The administration of calcium relieves the twitching. Demineralization of the tissues is marked in urema, and it has been suggested that this, rather than the retention of nitrogenous waste, is responsible for the clinical syndrome.

In uremia without edema, Peters has advised the use of 10 grams of sodium chloride daily. Fluids should be given freely as the objective is to increase the kidney output.

If vomiting occurs intravenous or subcutaneous normal salt should be given freely. Occasionally intravenous hypertonic glucose solution will be followed by a temporary increase in urine. The diet may contain considerable protein, and carbohydrate foods—such as gruels, mashed potatoes, cooked fruits and simple desserts—even without meat or eggs will supply considerable protein—enough for immediate needs.

Success rarely attends any form of treatment

Pain in the thigh which encountered in cases of disease of the colon or in cases in which the intestine has been subjected to surgical operation, suggests the possibility of perforation, with formation of abscess in the region of the psoas muscle.—*P. W. Brown.*

SURGICAL OBSERVATIONS

A Column Conducted by
THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

Recurrent Hyperthyroidism

Through a long period of trial-and-error, including doubling back on the trail more than once, subtotal thyroidectomy has been established as the method of choice in dealing with the vast majority of cases of hyperthyroidism. The removal of a certain amount of thyroid tissue will, in most instances, relieve the syndrome known as hyperthyroidism or thyrotoxicosis.

As a part of the thyroid gland must be left *in situ* in order to prevent the development of myxedema, and as this tissue has regenerative powers, we may expect an occasional regrowth of an adenomatous goiter with a recurrence of the hyperthyroid symptoms. No matter how careful and skillful the surgeon, a recurrence will sometimes occur.

Factors to be considered in regard to the thyroid gland and hyperthyroidism are those of the pituitary gland, the adrenals and other endocrines, more or less involved in the composite picture.

A patient for whom we did a thyroidectomy, had recurrence of the toxic symptoms with a great increase in the basal metabolic rate. A second thyroidectomy was done with relief of the symptoms; but after only a short while there was another recurrence of growth and symptoms. After prolonged treatment with iodine and after careful consideration of this case from every angle, a third operation was done, this time a *total* removal of of the thyroid gland. Following this the hyperthyroid symptoms persisted for a long time but gradually improved and finally subsided to the point where the patient was very comfortable; but for a long time after *complete* removal of the thyroid gland the basal rate was considerably above normal.

Almost certainly this patient has nests of thyroid tissue apart from the gland proper, which explains the vigor of the recurrences and the fact that myxedema did not develop after the last operation.

Another case very similar required almost a total thyroidectomy before relief was obtained.

In the exophthalmic type of goiter we occasionally see a case in which the exophthalmos becomes more pronounced for a short while after the thyroidectomy, even though the toxic symptoms are relieved. When the operation is done early, however, as a rule, the exophthalmos does not progress. If there is exophthalmos at the time of the first thyroidectomy, in the event of recurrence following operation there may be no increase in the exophthalmos.

In elderly people, before a thyroidectomy is done, a careful study of the heart should be made, including an electrocardiogram. The electrocardiogram should be repeated if necessary in order to determine as nearly as possible the exact condition of the heart.

One of our patients developed certain nervous symptoms some months after a thyroidectomy and a diagnosis of recurrence was made and a second operation done elsewhere. We saw this patient some time afterwards and a careful examination of the heart and nervous system convinced us that the supposed recurrence of the thyroid condition was really the development of an intercurrent heart condition with rapid pulse and certain nervous symptoms that were suggestive, on superficial examination, of a recurrence of the thyrotoxicosis. Still later, this patient developed a definite hyperthyroidism and the symptoms on which the diagnosis of recurrent hyperthyroidism had been made persisted.

Where there is recurrence of the adenomatous growths following a thyroidectomy, a second thyroidectomy should certainly be done and without any great delay. The patient, of course, should be studied from every angle and everything done to give relief from every other possible source of trouble that might be contributing to the symptoms.

In nearly all cases a secondary operation gives relief. A third operation is rarely necessary. It is rare for toxic symptoms to persist after the first thyroid operation, and recurrences, while they do occur, are, in our experience here, very infrequent.

Treatment of Fractures of the Clavicle ..With Comminution and Displacement of the Fragments, Making Good Reduction Impossible Without Open Operation

Many of the fractures of the clavicle of these times of automobile and other machinery accidents are comminuted and with considerable displacement of the fragments, making reduction without open operation an impossibility. In most such cases open operation should be done without delay, even though the injury be regarded as "only a broken collar-bone," and hospitalization is usually necessary until healing has well begun.

In reducing the fracture by open operation, large fragments of bone should be carefully preserved and used to reconstruct the injured clavicle. We have found that silk sutures, properly placed,

give good results and when the fragments are thus held in position for a reasonable length of time healing takes place, as a rule, without difficulty.

Keeping the patient flat on the back maintains the clavicle in good position. In some cases, a small pad between the shoulders is necessary in order to allow the shoulders to extend back enough to give additional traction on the outer end of the clavicle, thus holding the fragments in position without any inward pressure.

Where fractures of the clavicle, especially comminuted, are allowed to heal without open reduction, a fragment or spicule of bone projecting downward or backward may cause a nerve injury and considerable pain afterwards.

In open operation there is a scar, but a scar is preferable to a misplaced fragment or a malunion with a painful or well-nigh useless extremity.

Novocain Block of the Lumbar Sympathetic Ganglia in the Treatment of Thrombophlebitis of the Leg

Leriche says that the vasomotor reflex originating in the thrombosed venous segment has a great deal to do with the clinical manifestations of thrombophlebitis. His theory is that by blocking the sympathetic ganglia, and thus breaking the reflex, the symptoms may be relieved.

This method may also be used to estimate, before operation, the value of a proposed lumbar sympathectomy.

The injections are made along the lumbar sympathetics at the level of the first, second, third and fourth lumbar vertebrae. The immediate results are the same as those of a lumbar sympathectomy. There is dilatation of the blood vessels and the limb becomes warm and the color improves—often to a pink color.

In an acute thrombophlebitis this may be used immediately. In other cases where there is interference with circulation of the lower limbs, it may be used any time as a therapeutic procedure.

The results in this method of treatment have been exceedingly good and are worthy of continued use.

The need of medical and social supervision for arrested cases of tuberculosis over a prolonged period is clearly indicated. This can be best assured by having the patient in the care of his family doctor. Even when he is in a sanatorium at a distance the family doctor relationship should be maintained and the family doctor be sent weekly reports, so that he can answer inquiries and be prepared to resume sole charge of the case immediately on discharge.

Unexplained low fever with suggestion of neurasthenia should bring brucellosis to mind as a possibility.

DEPARTMENTS

HUMAN BEHAVIOR

James K. Hall, M.D., *Editor*, Richmond, Va.

Civic Impotence?

A few hours after the German Army initiated the second World War by shell-fire directed against the Poles at day-break on Friday, September 1st, the State of North Carolina killed a 24-year-old Negro, Arthur Morris. The Negro, lately come to be known in police circles as the 'Grey Mouse,' was strapped in the big chair in the gas chamber in the penitentiary, the chamber was sealed air-tight, a lethal gas was liberated within the chamber, and for the greater portion of a quarter of an hour the spectators observed through protecting glass walls the effect of the majestic punitive might of their state. After many major generalized convulsions, the young Negro was dead. North Carolina had killed him.

What had the state previously done for or to the youthful Negro? At the time of his last arrest, which was soon followed by his execution, he was an escaped prisoner from the state's penitentiary, to which he had been sentenced for a capital burglary for 50-80 years. Had he been an eloped patient of a private hospital or a private sanatorium would it not have been called upon to make answer? Can the state legally set aside such a sentence of a court by executing a prisoner?

At his final trial the boy was convicted of having entered the home and the bedroom of a physician in Raleigh, and of having taken from the pockets of the doctor's clothing a pocketbook and a small amount of change. The cash amounted to twenty cents. In the bill folder was a check for several dollars. The attempt of the young criminal to convert the check into cash opened for him a straight pathway to the lethal gas chamber. In it he paid finally and dearly for the two dimes of the doctor.

The press states that the 'Grey Mouse' was suspected of having carried through successfully a number of capital burglaries in towns not far from Raleigh. But he was evanescent and elusive. His motto evidently was: absum. And evidence that he had been adsum was often inconclusive. Although he had spent the doctor's two dimes he still possessed the doctor's check and for his attempt to establish ownership of it the state made him give up his life.

I believe that North Carolina is one of the few states in which the attempt to commit robbery in an occupied residence is a capital crime. The legal

assumption probably is that the robber does so in a state of mental and physical preparation to kill, if he should be discovered in the act. If the occupant of the house should attempt to identify or to apprehend the robber it is easy to understand that the robber might believe it well for him to remove by killing the person who might subsequently testify against him. The particular law may make of a simple, hungry and destitute burglar a killer. But, I know nothing of the 'Grey Mouse's' knowledge of the laws of North Carolina.

The Governor reviewed the young Negro's criminal career, and the Governor is a kindly, humane man But he was painfully impressed by Arthur's lack of respect for a constitutent of the Decalogue and for some of the state's statutory enactments. The Governor must have concluded that Arthur had behaved badly in the extreme, for he was unwilling to save him from the state's ultimate step in punitive procedure.

One wonders, of course, if the Governor reviewed with equal thoroughness and dispassion all those things that the state had done and had not done for Arthur Morris throughout the twenty-four years of his existence spent amongst the 3,500,000 citizens of that puissant Commonwealth? How many times the boy had been tried before his last assize, I do not know. For the commission of how many and what crimes he had been apprehended and could not be convicted, I do not know. About his ancestry, his origin, his heredity, his early environment, his physical and his mental equipment, I do not know.

The press proffered the information that before his exit he confessed the commission of more than fifty capital burglaries. Had he begun such contra-social behaviour at the early age of twelve years, his statement, if true, would mean that he had out-smarted the police in carrying to completion an average of four residential burglaries a year. Do mentally normal people, black or white, young or old, in North Carolina or elsewhere, behave in such fashion? If they do maintain such an attitude towards the goods and the domiciliary habitations of their fellows why should we continue to burden our sociological lexicons with such verbal symbols as abnormal and psychopathic?

I surmise, indeed, I suspect, that the 'Grey Mouse' was sent out of the civic set-up of North Carolina because of the state's incapacity to cabin and confine him. I do not propose to ask the state what was the matter with Arthur Morris. It is often embarrassing to us doctors to be interrogated so directly. Not infrequently, perhaps in consequence of professional ignorance, we doctors let a patient die; but we doctors are not allowed to kill openly, even a troublesome patient, merely because we lack diagnostic acumen and therapeutic equipment adequate for the situation.

But mankind in the mass has been busily engaged throughout the ages in killing those individuals whom it could not or would not understand. For ignorance embarrasses, it often enrages, and of all the emotional perturbations fear is the most uncontrollable and the most destructive. Throughout the world many great groups are now busily engaged in defending their own group-terror by trying to make other groups still more afraid. What a sad spectacle!

The next time I journey through my native state, I shall recall, when passing the citizen's melon patch or apple orchard, the final fate of the 'Grey Mouse,' and I shall have respect for the law and for the pronouncement from Sinai, too. Know ye the truth, for liberty and justice have no other origin.

GENERAL PRACTICE

James L. Hamner, M.D., *Editor*, Mannboro, Va.

The General Practitioner's Job

In the last issue of this journal, Dr. Johnson's final contribution to this Department was under the title, "Farewell." This one might, equally well, be labelled "Appreciation." It is with a sincere appreciation that I begin as co-editor of this department. I sincerely appreciate the privilege of trying to be a help in this position and certainly feel honored to try to help take up where Dr. Johnson left off. It is going to be a pleasure to work with Dr. Lackey and lend my efforts along the line of being of help to the General Practitioner everywhere.

I would like to fill this column with a real appreciation of the excellent work done by our predecessor, Dr. Wingate Johnson. His work was always an inspiration and an encouragement. It is a pleasure to know that he is going to use his talents in the same manner in the future only in a bigger and more responsible way. Our best wishes go to him for a continued increase in success and happiness. We could not forget to express our real appreciation to Dr. Northington for remembering us in this instance and above all his untiring efforts to make the Tri-State Medical Association the best doctors' organization, and *Southern Medicine & Surgery* the best general store of current medical knowledge to be found anywhere. We can only hope to be of some help to him in his excellent undertaking.

No one, who has done general medical work over a period of years, can fail to appreciate the real opportunity for service that is the general practitioner's, at all times. There is no room for envy, jealousy or harsh criticism of one's colleagues. All the available time and energy is needed to do the huge task that is before us. There was never a time when the general practitioner filled a more important place than he does today. His duties are increasing by leaps and bounds. The threat of socialized medicine and the ever increasing number of quacks of all descriptions must largely be laid at the general practitioner's doorstep; not that he is the sole cause of all of this, but because he is the best means of combatting these tendencies.

When the general practitioner does his job well, realizing his limitations as well as his qualifications, he has gone a long way toward solving a great number of the problems which confront the profession today. There are too many routine tasks to be done to try to do all. Let us recognize the cases which can best be handled by the specialist, whatever may be his field; call on the diagnostician when in doubt, and refer patients to the specialist when we can not afford the equipment nor spare the time to care for them properly. Let us be equally alert to take care of the patients we can take care of well, and not make them go to unnecessary trouble and expense. In other words let us make the most of our opportunities by rendering efficient service, including proper utilization of our friend and colleague, the specialist.

Let us summarize some of the everyday ways and means of doing real service as practitioners of general medicine: First of all we must try to prevent disease in every way possible by preventive measures. We must institute quarantine measures and act as health officers until the regular health officer can come in and take charge. It is then our duty to coöperate with him in every way possible to prevent the spread of disease. The presence of a local health officer by no means relieves the practitioner of his duties to the patient, his family or the community as a whole. He should still give careful attention to the prevention of disease as well as its treatment.

The general practitioner should always find time to discuss with his patients any trivial complaint they may present. There is nothing that drives a patient from the regular medical profession to the quack more than to have him go to his physician and be told, without any kind of an examination, that he has nothing wrong. Every patient deserves a good examination and careful consideration to every complaint, however trivial. Give him every indicated examination, and if this should not satisfy him send him to a capable man who can do anything else that may be needed. Prenatal care is and should be the responsibility of the general practitioner, as long as he accepts obstetrical cases. He should be equipped to do a good delivery in the home, follow up his case and give a check-up at six weeks, and later as indicated. He must correct, or have corrected, any remaining ill-effect which may be attributed to the pregnancy or delivery. He must see that the baby is properly fed and that his development is normal. It is his duty to advise the mother and to see that the child gets the proper care and preventive measures to ward off the various infectious diseases.

Also, it is the general practitioner who is asked to look after that child through adolescence and young adult life. Then he is called upon to help him out with his family, and so on.

Let us meet the challenge to doctors, always trying to relieve, usually to cure, always to comfort; and doing our best to make this a better world to live in. Surely, unless we appreciate the wonderful opportunities that are ours each day and meet them fairly and squarely, we have missed the best that is in store for us.

UROLOGY

For this issue P. Emery Huth, M. D., Sumter, S. C.

Nitrogenous Retention Caused by Obstruction of a Solitary Kidney

A typical sydrome of renal colic infrequently causes the physician to doubt his diagnosis; but, he rarely will consider that the colic might be in a solitary kidney. Very rarely will this diagnosis be made before complete urological examination. In a series of 38 renal anomalies Braasch found 6 such cases and in 4 he made a clinical diagnosis of the condition.

Solitary kidney is found once in one to four thousand autopsies, equally distributed as to side and sex.

Renal ectopia and solitary kidney are rare in the same individual. The ureter may be single to the functioning organ or it may be double with the ureter on the opposite side of varying length ending in a blind pouch. There may be one orifice to the functioning ureter and only a dimple in the opposite side of the trigone, or that side of the trigone may be entirely missing. The functioning kidney is usually larger than the normal.

Young says the solitary kidney is more frequently the location of a pathological condition than a normal organ. When surgery is contemplated upon a kidney which is suspected of being

solitary the demonstration of the presence or absence of the opposite kidney is imperative. Today it would seem impossible to fail to recognize the presence of this anomaly; however, especially when both ureteral orifices are present, it is at times very difficult to differentiate unilateral renal agenesis from atrophy of a formerly normal kidney. By retrograde and intravenous pyelography and meatoscopy solitary kidney can usually be recognized. When doubt remains as to the existence of an opposite kidney, one is justified in exploring the presumably agenetic side.

Young cites a series of 11 cases of solitary kidney in which surgical operations were performed—7 nephrectomies, all ending fatally. Eisendrath collected a series of 11—5 nephrectomies, all with fatal results in 7 to 10 days. Such fatalities are rare now. Especially in case of trauma, nephrectomy should not be done before establishing beyond doubt the existence of one functioning kidney.

A patient who has been demonstrated to have a solitary kidney need have no greater fear of disease than one having two kidneys, except for the obstructive uropathies which in this case demand immediate and satisfactory relief. In the case report to follow the patient had renal colic in one side to be followed by complete anuria. This at once suggested the existence of a solitary kidney or obstruction of the only remaining good kidney of a former pair.

F. Harold Entz, in the *Year Book of Urology* for 1936, reported a case of solitary kidney in a patient who entered the hospital anuric and died despite vigorous treatment with intravenous saline and glucose, diuretics and hot packs. No cystoscopic efforts had been made to relieve the urinary suppression; autopsy demonstrated a large solitary kidney with a small stone tightly wedged into the upper calyx. No cause for the anuria was found.

Case Report

A white matron, aged 51, nulipara, with complaint of pain in the right side, nausea, vomiting and no urine passed for preceding five days. Five days before acute pain was felt in the right side of abdomen, radiating toward right kidney and downward toward vulva. Morphine given hypodermically gave relief. The next morning she voided a small quantity of urine, the last until she was admitted to the hospital three days later. Three catheterizations in the hospital obtained no urine. Nausea and vomiting increased. After 36 hours in the hospital she was transferred to the urological service. There was nothing significant about her past history except for an abdominal operation at which time adhesions were broken up.

A small elderly woman, apparently quite sick though not in pain. Positive findings: Sordes about the teeth and herpetic masses on the lips, little chest expansion, slight roughening of the first heart sound over the apex, b. p. 135/100, the abdomen distended and tympanitic, left upper quadrant gave the impression of fullness which the patient said was due to an enlarged spleen found several years ago, right upper quadrant tender and there was a reniform mass which descended on inspiration and which was identified as the kidney.

On April 27th, 1939, catheter specimen of urine from the right kidney, of very small amount, contained neither albumin nor sugar, but 4-plus blood and 1 to 3 pus cells per high-power field, no casts. Hemoglobin was 66%, w. b. c. 4,800—neutroph. 70, eos. 2, s.l. 14, l.l. 12; Wassermann and Kahn tests negative.

Blood urea nitrogen was 73.8 mgm., creatinine 7.0 mgm. Phenolsulphonphthalein test: appearance time per ureteral catheter, 3 minutes; 17 per cent in first hour. No second specimen taken. Cystoscopic examination was made the same day under the usual anesthesia and no complaint was made on introduction of a 21 F. instrument. The bladder was found to be empty. No abnormalities were seen in the mucosa or ureteric areas. Indigo-carmine given 15 minutes. A ureteric orifice could be seen on the right by vein was not eliminated from either ureteric area in but none on the left. A 6 F. ureteral catheter was passed to the right ureter for 27 cm. and several c. c. of urine, highly colored with indigo-carmine, was obtained. The left ureteric orifice was then sought for but could not be found. Due to the very serious condition and previous ureteral obstruction, she was sent to the ward with an indwelling right ureteral catheter. A flat x-ray film with the ureteral catheter in place demonstrated a normal path for the catheter but no evidence of obstructive pathology nor a stone shadow on the right side. A large shadow suggesting a renal calculus was seen in the left kidney region. No kidney shadow was seen on left side.

The ureteral catheter continued to drain freely. Intravenous injection of saline and 5 per cent glucose was followed by profuse discharge of urine through the catheter and around it. The catheter remained in place for 36 hours. After its removal urinary secretion continued.

On cystoscopic examination, May 1st, bladder was found to contain urine and the mucosa normal. With an examining telescope in a 28 F. cystoscope a left ureteric opening was looked for. Intravenous indigo-carmine was eliminated from the right ureteric orifice in deep concentration in 4 minutes; none was seen coming from the corresponding area on the left in a half-hour, nor any opening for the left ureter seen after intensive search. There was a dimple in that location. A pyelogram made with the head 15° below the horizontal demonstrated the calices of the right kidney clubbed and distended and the ureter dilated and tortuous with a sharp narrowing at the ureteropelvic junction. The kidney was rotated and there was a moderate degree of hydronephrosis. The calcified mass, having the shape and appearance of a calculus, was still present on the left side, but no kidney shadow was seen; while the right kidney shadow was very plain, it was decided to be calcified lymph glands.

The patient had no reaction and was discharged from the hospital two days later symptom-free and feeling well. Three weeks later the writer saw her and she was feeling fine and would not permit further examination.

For After-pains—Ergot does not help. Pituitrin and pitocin are apt to aggravate. Adrenalin may relieve temporarily, but is prone to cause palpitation. A single dose of progestin may relieve. Morphine is the most dependable and satisfactory treatment—and the cheapest.—*Blakely.*

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Epigastric Hernia

Hernias below the umbilicus are so common and so disabling that they have demanded consideration commensurate with their importance. Hernias of the abdominal wall above the umbilicus are neither common nor as a rule very hazardous, so they have received but scant attention.

Spontaneous hernia in the midline *below* the umbilicus is a rarity, but such hernia in the midline *above* the umbilicus—epigastric hernia or hernia of the linea alba—is not so rare. Herniation takes place as a rule about midway between the ensiform and the umbilicus. The condition is supposed to be of congenital origin, and is prone to develop at a place where the passage of a blood vessel through the fascia impairs its integrity. This, however, is not always true; in some cases there is no vessel near the hiatus.

The patient with epigastric hernia complains of pain, soreness and tenderness in the epigastrium which have no relationship to eating but are made worse by intraäbdominal tension from straining. The pain does not radiate and the patient can accurately locate the lesion.

A tender mass, usually not larger than an acorn, can be outlined at the place of maximum soreness by deep palpation with the tip of the examiner's finger. It may or may not be reducible. Because of the small size and high location, impulse on coughing cannot often be elicited. Deeply seated in the subcutaneous fat, the mass connot be visualized.

When the patient has definite symptoms of epigastric hernia we think exploratory operation should be done, even though a mass can not be felt. Otherwise, in a fat person, if the mass is small and reducible, it will not be found. At operation one must be sure the condition is not an umbilical hernia that has extended upward. The criterion for any abdominal hernia is the presence of a sac. In a true epigastric hernia there is an outpouching of the *peritoneum* through the fascia. In a false epigastric hernia, the mass outpouching is of *peritoneal fat* without peritoneal covering. In both, incarceration and strangulation are constant threats. Even in true hernia, however, the contents are omentum and practically never intestine so that strangulation has but little hazard.

At operation, when there is palpable mass to mark the site of the lesion and no hernia can be found, the fascia should be incised. The opening of a hidden hernia can be more readily found from within. When identified the opening should be closed by overlapping the fascia from above downward or from side to side.

Although epigastric hernia is without mortality it is often a diagnostic problem and morbidity always continues until the condition is cured by operation.

GYNECOLOGY

G. Carlyle Cook, M. D., *Editor*, Winston-Salem, N. C.

Overlooked Myxedema

Three months ago a mother brought into my office a young, erect, over-size girl, 16 years old, weighing 150 pounds and of excellent physique. Upon first notice one was struck with two conspicuous abnormalities: one, obesity, approaching the masculine type; the other, this freckle-faced, red-headed girl was very pale.

I started on her history. Then she told me without being asked that two years ago she had menustrated regularly and normally for one year. Then she began to bleed and had bled constantly ever since. She had been treated elsewhere almost continually since the second month of her bleeding.

Without leading questions she informed me that she had had thyroid, theëlin and antuitrin S medications, a D-and-C and radium treatment, a B. M. R. and liver therapy; but nothing had improved her condition one iota. I told her mother that there was mighty little left for me to do.

I made a photograph in each of three positions and x-rayed her pituitary gland fossa—and both procedures showed a typical pituitary abnormality. The ordinary photographs showed pituitary deficiency type and the x-ray picture showed a very small sella with a greater portion of its concavity showing calcification; her B. M. R. was minus-16.

Immediately I put her on one-c. c. doses of antuitrin S and three grains of thyroid extract daily. Her bleeding slightly checked but did not cease. In ten days I curetted the infantile uterus. Her hemoglobin being 40%, she was given lextron and forced general diet.

For two weeks after curetment she was free from bleeding and then had a three-day period of normal menstruation. From it she cleared up. In exactly 28 days she had another normal three-day period and now is perfectly well and happy. Her hemoglobin is 80% and she looks much more feminine.

This is a case in which easily observable sign posts had not been observed; certainly the plainly written directions had not been followed.

We should remember that the thyroid gland is activated by the pituitary in like manner as the

ovaries and this case of myxedema was clearly of pituitary origin, and when the diagnosis of pituitary insufficiency is definitely established, heroic doses of antuitrin S are necessary.

TUBERCULOSIS

P. P. McCain, M.D., *Editor*, Sanatorium, N. C.

The Value of Phrenic Nerve Interruption

Except for pneumothorax, we consider paralysis of the phrenic nerve the most valuable procedure in the collapse therapy of tuberculosis. This week a young lady made application for admission to the Nurses Training School at N. C. Sanatorium, who, five years ago, at the age of thirteen, came to the Sanatorium as a patient with far advanced disease. The upper two lobes of the right lung contained three large cavities, and she had rather heavy tuberculous infiltration over the middle third of the left lung. Collapse of the right lung with air was attempted but adhesions prevented. After a phrenic operation and two years on the cure her disease was arrested, she has been able to finish high school and x-ray films show only a few areas of calcification and fibrosis in the upper right lung and no lesions in the left. Without the operation this girl would have had no chance. While this operation is by no means always so successful, so many of the 1280 patients on whom we have had the operation done here at N. C. Sanatorium have been materially benefited that we are thoroughly convinced of the value of the operation.

There is some disadvantage in a permanent paralysis of the diaphragm, and in more recent years phrenicectomy is found to be very rarely necessary, temporary paralysis by crushing of the phrenic nerve sufficing. This temporary paralysis usually lasts from a few months to a year or more. If function of the diaphragm returns sooner than desired, the crushing can be repeated. Within recent years it has been a routine procedure for us to have a phrenic operation done on all patients who needed pneumothorax, who, because of adhesions, could not get a collapse. We also quite frequently employ phrenic interruption with other procedures, especially with pneumothorax. Not infrequently cavities which can not be closed by pneumothorax alone may be obliterated by continuing the pneumothorax after a phrenic operation.

Bilateral phrenic interruption is a dangerous procedure, to be used rarely, if ever. In bilateral disease, however, a temporary phrenic operation may be used on one side and pneumothorax on the other. Some recommend the phrenic operation in comparatively mild cases of unilateral tuberculosis because it is simpler than the giving of pneumothorax frequently over three or four years. If the patient is not going to be so situated after leaving the Sanatorium that the pneumothorax treatment can be continued, it is probably wise to give the phrenic operation a trial. If the sputum becomes negative and satisfactory improvement is shown in a few months, well and good; if not, pneumothorax can still be employed.

Phrenic interruption is also a great help in many patients who have to wait for some months for their turn to be admitted to a sanatorium. Most such patients can not get pneumothorax at home. If their disease is active and sputum positive they are a great source of danger to others of the household. A phrenic operation not infrequently causes such a patient to improve so greatly that no other form of collapse therapy is needed, and so much improvement is shown by the time of admission to the Sanatorium that the stay is much shortened. We also at times find the operation useful in helping to control hemorrhages.

The beneficial results following phrenic interruption usually appear early, the diaphragm at times continuing its rise for one or two months, to an elevation of from one to three inches. If the cavity is not closed and if the sputum does not become negative within two or three months, it is usually wise to consider the advisability of using additional collapse procedures.

OBSTETRICS

For this issue R. A. White, M.D., Asheville, N. C.

Who Should Have a Baby?

All of us who do obstetrics as a specialty or in conjunction with other branches of medicine are confronted with the question, Should this patient be allowed to have a baby?; and again, many times each year women come to us in the early weeks of pregnancy with the statement, "My doctor told me when my last baby came that I should never have another one." We are then placed in the position of finding out if there is any reason why she should not have another baby, and, if so, what we should do about it.

So far as I have been able to learn, there is no comprehensive criterion anywhere in the literature to answer this question. It is far from being the purpose of this paper to answer it, but merely to correlate some of the indications and contraindications to a safe journey through pregnancy and confinement.

The rules laid down for us as regards interruption of pregnancy take into account *only* the physical status of the patient. The American College of Surgeons, the Duke Foundation, the hospital boards, et cetera do not admit the social and economic factor. Yet, to evaluate the physical reasons for such procedure, it is essential to consider the social and economic side. For example, a woman with mild cardiac disease who has domestic help and can spend sufficient time in bed, may be safely taken through pregnancy; while one who must do all her household duties, including attention to other children, could not safely attempt it. In the same class is the patient with mild, chronic tuberculosis or any other physical disability which requires rest and restricted physical activity. There is great need for modifying these dogmas. It is true that these rules were made to protect us against the unscrupulous, but have we not learned backward? It is only within recent years that our state laws have sanctioned the giving out of contraceptive information and equipment and the sterilization of the mentally defective.

The tendency in the maternity centers is to take a broader and more liberal attitude, to the effect that a woman who can not reasonably take the risk, whether from inimical physical or environmental circumstances which can not be corrected, should not be allowed to continue with her pregnancy. This attitude, properly applied, will, in my opinion, do more to reduce maternal mortality than any one step.

Of the substandard prospective mothers who come to us, those with cardiorenal symptoms far outnumber the others. This group includes: 1) the chronic hypertensive; 2) the chronic nephritic with or without hypertension; 3) those with a history of toxemia during previous pregnancies. The last class may or may not show elevated blood pressure and often no abnormal urinary findings. More than at any other time, the obstetrician needs consultation and laboratory facilities in making up his mind as to what should be done with these patients. The eye-grounds should be studied, a complete blood chemistry study made, and renal function tests and basal metabolic rate should be determined.

The patient with essential hypertension is probably the least prone to develop an acute toxemia. She will, however, show a gradual rise in blood pressure throughout pregnancy and will be left with a higher mean pressure after each pregnancy. This should be explained to her. If she has no children or is desirous of another and can and will coöperate fully with her doctor, he may be justified in allowing pregnancy. She must, however, be considered and managed from the beginning as a potential toxemia patient.

Treatment:

a. Explain possible dangers, and need of unusual care.
b. Start fluid-balance test at once—do not wait for indications.
c. Teach patient to make, and be guided by, frequent fluid-balance tests.
d. Watch and control weight gain, blood pressure, kidney function.
e. Insist on quality of food—not quantity—and only at regular intervals.
f. Five small meals—meats, milk, eggs, cereals, vegetables and fruits—a balanced diet, low in salt and sweets.

For the patient who has had eclampsia, but now shows no evidence of renal damage, the risk lessens as time goes by. I feel that at least two years and preferably three should intervene. Even then, renal function tests (creatinin, npn., et cetera) should be done, and if they are not within normal limits, she should be advised to wait longer.

When pregnancy does occur, the case should be handled as the essential hypertension group; that is, immediate institution of the routine just outlined. Many of these women show toxic symptoms late, and often it is necessary to terminate pregnancy prematurely.

The next large group in which risk is excessive is the tuberculous. Here, it is necessary to have in consultation a man who knows how to interpret clinical and x-ray findings. Generally speaking, a woman with active tuberculosis should not be permitted to have a baby. This is particularly true when the lesion is incipient, prone to heal rather quickly with bed rest; whereas, if pregnancy, with its extra load, is allowed and the cure postponed a year, the lesion will of necessity extend. The patient with an old lesion, even though active, has built up a certain resistance and can better stand the burden. It is a rather general practice among specialists to insist upon a minimum of two years after a lesion is healed before sanctioning pregnancy. The actual carrying of a child has remarkably little ill effect upon a tuberculous woman. In fact, there is frequently an apparent beneficial effect due to the natural buoyancy of pregnancy. Many claim that the pressure upward against the diaphragm during the last months has a beneficial effect similar to that obtained by phrenicotomy or an artificial pneumothorax. It is the labor, delivery, anesthetic and after-care of the child that do the great harm. Therefore, labor should be made as short as possible and the mother

should have none of the care of the child. If she is expectorating or coughing with any bacilli in the sputum she should not come in contact with the child. No tuberculous mother should nurse her baby.

Endometritis and endometrial hyperplasias are conditions which should be corrected before pregnancy is allowed. An unhealthy endometrium is, I think, the most frequent cause of miscarriage; or, if pregnancy continues hydatidiform mole, polyhydramnios, premature separation of placenta or placental infarcts may develop. The last-named condition is believed by many to be a frequent cause of toxemia of late pregnancy and of fetal death.

The cardiac patient is a law unto herself. Each must be considered upon her own merits. I regard a mitral stenosis more gravely than any other lesion. The social and economic factors have strong bearings. The patient with a heart damage which is compensated, and who can restrict her activities and spend sufficient time in bed, will withstand the strain of pregnancy wonderfully well; but for the woman with even a mildly damaged heart, who can not take these precautions when conditions demand them, I would be loth to sanction conception, or the continuation of pregnancy.

The hypothyroid patient should afford the obstetrician no great concern. In fact, the thyroid function may increase during pregnancy and I know of no contraindication to thyroid therapy at this time. The hyperthyroid, however, is a horse of another color. I have seen a number of women with mildly over-active glands have violent acute attacks late in pregnancy or immediately after delivery, with exophthalmus, tachycardia, tremor and all. With patients of this type, frequent metabolic readings are indicated, as is proper treatment—medical, surgical or both. I am afraid of the hyperthyroid.

Our county and state institutions are filled to overflowing with offspring of the mentally defective. We have laws permitting their sterilization and we are permitted, with consultation, to abort such pregnancies. The proper solution of this problem would remove a great load from the backs of the taxpayers.

Syphilis and pregnancy has been written upon voluminously. McCord seldom reads a paper that does not touch upon it. Our State Legislature has enacted a bill which demands that routine Wassermann or Kline tests be made on all pregnant women. It is needless for me to dwell upon the effects of syphilis upon the fetus or newborn child. The important points I wish to make are: first, to determine its presence; and second, to institute immediate and intensive treatment. There is usually no contraindication to antisyphilitic treatment throughout pregnancy. I have seen a number of nonsyphilitic babies from syphilitic mothers when this had been done. Fortunately for the baby, intrauterine death frequently occurs when intensive treatment has not been given. The effect of pregnancy upon the syphilitic mother is not of sufficient importance to merit discussion.

Pyelitis and pyelonephrosis may be successfully treated during pregnancy; however, a severe and recent attack before time has elapsed for recovery, may be just cause for therapeutic abortion, as would be the case following any extensive and debilitating infection.

There are any number of diseases, circumstances and conditions, which might render having a baby hazardous; too many to enumerate in a short resumé. To mention a few at random: diabetes, first pregnancy past thirty-five, menopausal age in a woman who has borne children in her twenties and none for fifteen years, uterine fibroids, chronic cholecystitis, cystic mastitis, phlegmasia alba dolens, asthma. Any of these and many others, may at times contraindicate pregnancy, but each must be dealt with individually with careful study and consultation.

Finally, what are we to do with the overproductive indigent, and low-income groups? *Contraceptives*, sterilization of the male, rehabilitation and sterilization of the woman after sufficient progeny seem to provide the most satisfactory answer.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Man as a Swimmer

Dr. H. Marshall Taylor, a distinguished otolaryngologist of Jacksonville, presented his prize-winning motion picture, The Harmful Effects of Swimming on the Respiratory Tract, before the Buncombe County Medical Society on August 7th.

First the history of swimming was outlined, from the earliest recorded times down to the present age of record-breaking racing in the water.

Man is poorly equipped for swimming, having departed far from his marine ancestry.

According to Dr. Taylor, all air-breathing aquatic animals are possessed of a valve which closes off the nasal canals whenever the animal submerges. These valves remain open for breathing and hearing when that part of the animal is out of the water, but automatically close when the animal submerges. The action is so perfectly timed that

not a drop of water enters either canal. The opening and closing action of these valves was fascinatingly demonstrated by the motion pictures. The porpoise darted above the water surface and almost immediately submerged, the valves working just as smoothly and quickly. Other animals so pictured included the manatee, seal, hippopotamus, alligator, cormorant and pelican.

Man having no such protective mechanism, water enter his nasal and ear canals every time he submerges. Water injures the nasal mucous membranes, by carrying in bacteria, or by preparing the membranes to become prey to the already present bacteria. Infection of the sinuses, of the eustachian tubes or of the middle ear may follow. Water in the normal external ear canal may do little harm; but if there is a chronic perforation of the ear drum, serious damage may result. Dr. Taylor strongly advises against the use of any of the popular ear plugs advertised for this purpose, because none of them is safe.

Dr. Taylor's motion pictures showed how the novice breathes while swimming and then how the expert swimmer breathes while in the water. The expert breathes through his mouth and exhales through his nose, thus preventing the entrance of water into his nasal cavities. The little boy who holds his nose as he jumps into the water, feet-first, may look timid but he is wise as by so doing he protects his nasal passages from the sudden stinging entrance of water. The sudden impact of water when the nose is not held closed may be and often is quite damaging to the nasal mucous membranes.

The dangers, chiefly broken neck, of diving into shallow water were dramatized in his film by a trained group of boy scouts. The proper procedure of caring for such patients while in the water and after being taken ashore were clearly shown. Just as the injured and unconscious football player is not to be manhandled because of the possible chance that he may be suffering from a broken neck or back, so should the injured swimmer be carefully handled. He is floated or towed ashore, his back and neck all the while protected against added injury.

The dangers of indoor swimming were then shown. "Sitting around in a wet bathing suit on a cold marble floor is just as harmful as sitting in your basement wrapped up in a cold wet blanket." The account of the effects of such body chilling was quite informative. The fat child can better withstand the chilling effects than the thin child, just as can the polar bear and the whale withstand the cold of the polar waters better than can other water animals. See to the thin, shivering, blue-lipped child. In Jacksonville a law has been enacted which prohibits indoor swimming for more than 30 minutes at a session. In this way the chilling damage is avoided. The body temperatures of bathers often drop to as low as 92 degrees and frequently restoration of body temperatures to normal is a matter of hours. A leucocytosis follows activity while bathing but a leucopenia follows prolonged inactive stay in the water.

Dr. Taylor has had so many requests for his film that he has had four copies made. They are being shown over various parts of the country. See it if you can, it is well worth a trip of miles. The picture has been edited in such a manner that it can be understood by lay audiences.

INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

MEALS THREE TIMES A DAY

IT is rather strange that in the United States, people have been encouraged by physicians to eat three times a day and not to eat between meals. This is indeed singular when one stops to consider the number of times that people eat in the other countries. So far as the writer knows, this is the only country where people are so advised. If one goes to other countries, it is something of a jolt to find that when the steamer leaves the pier, the three-meals-a-day idea is thrown overboard and immediately one falls in with the intermediate feedings served on board. Landing in a foreign country, the traveler will be quick to observe, as he goes from place to place, that the eating habits of Europeans and Asiatics are quite different from our own. No wonder the American public eats so rapidly. The appetite is whetted by the difference of food to the point where one sits down to the table ravished, and proceeds forthwith to consume at such a rate that it makes foreigners wonder how long it has been since one has been e posed to food.

One cannot help but wonder how this three-meal-a-day idea took hold and rooted itself so firmly into the American habit of living. The writer is not able to find any documentary evidence as to how this system came into vogue. He feels that it may not be too far-fetched to claim that the custom may have come down at first through the slavery system, when slaves were not allowed to stop for food except at mid-day and the master may have encouraged the idea in his subordinates by subjecting himself and his family to the same rule. In the factory system, this idea has been perpetuated.

The enormous incidence of motor and secretory disease of the alimentary tract in this country is astounding. There must be some reason for this. Since our working conditions are good, food plentiful and cheap, the variety a veritable galaxy and our stock fundamentally not different from that of those who eat differently and have less digestive trouble. It may not be amiss to look into our habits of living to find an answer for the frequency of motor and secretory disease.

Perhaps if the intake of energizing material had a greater spread through the wakeful period of the day, people would be more content. The fitfulness of the hungry person could be prevented and the vital forces resulting from the frequent feedings be more uniform. Also, the emotional flow probably would be more sustained.

That there is a natural revolt by the people against this three-meal-a-day fetish is found in the ubiquity of the soda stand, the hot dog stand, the lunch counter. The enormous growth in this sort of business in a slight way is beginning to modify the three-meal-a-day idea. Our people, from their own instinctive carvings rather than on account of advice from the physician, are reverting to the eating habits of the old countries. Factories in which eating was forbidden in the past are now selling concessions to vendors of sandwiches, soft drinks, peanuts and milk.

The writer is of the opinion that people would not be inclined to eat too much, would eat with greater selectivity and would have less alimentary complaints if they were encouraged to break away from our traditional unphysiological eating habits.

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

The Graduate Nurse in Private Practice

Observation of the work of a private nurse over the period of 20 years has prompted the writing of this paper. After a nurse has been in training for three years she is given her diploma and recommended to the public as being capable of taking charge of an ill patient for the better part of each 24 hours, the visiting doctor coming usually only once a day unless the patient is desperately ill. What she does during this period will depend entirely upon her training. Let us look in upon her one morning as she reports for duty in a private home.

If the nurse is on a 12-hour shift she will report at 7 in the morning. Her patient may or may not be asleep but usually she has not had her bath, her hair has not been combed, her teeth have not been brushed and the room has not been tidied up nor the bed linen changed. This must be done as a rule by the special nurse. It is seldom that members of a family are capable of moving in and out of the room without disturbing the patient at this time, and besides, the patient feels, and rightly so, that the nurse should be better qualified to prepare both the patient and the room than are members of the family. Soiled linen and dust pans should not be beneath her dignity, and "a dust rag shouldn't give her hay fever."

The next thing in order is the patient's breakfast. More often than otherwise the doctor has ordered some special diet which very seldom the cook is capable of preparing. It is the duty and responsibility of the nurse to prepare this food or have it prepared in the proper manner. It is the belief of the writer that the nurse who goes into the kitchen and helps with her own hands to prepare these meals is more popular than is the one who goes to the kitchen door and gives the order to the cook. There is nothing degrading in this type of service for the patient. After breakfast has been finished the thoughtful private nurse removes the dishes to the kitchen, and if there is no servant to wash them and the condition of her patient will allow it she will wash the dishes and set the empty tray for the next meal. She is now ready for her own breakfast.

She should not complain about the food and she should not expect to be waited on by members of the household. Of course if there is a cook in the kitchen it is right to accept service from her. If for any reason the food prepared for breakfast customarily disagrees with the nurse she should in a modest and polite way ask if she might have some other food which is convenient. She will not hurry through her meal unless her patient is desperately ill, nor will she idle time away at the table.

She now returns to her patient to render any and all types of service from bedpan and urinal to that of giving medicine. She is also called upon to give information to the family concerning the condition of the patient, take care of the problem of visiting in the patient's room, answer the patient's numerous questions and administering generally to the well-being of her patient directly and the whole family incidentally. If flowers have been received for the patient she is to prepare them for the vases and dispose of the withered ones by putting them in the proper place for trash and garbage. She does not throw them into the waste basket in the patient's room and wait for the servant to clean them out.

About this time the physician is likely to drop in to make his morning visit. If the nurse wishes to consult the doctor before he goes in to see the patient she will keep a sharp lookout for his appearance and excuse herself to the patient to meet him at the front door. This is often necessary when the patient's condition is not satisfactory. The nurse will wait on the physician and help him examine the patient. She often has to bring a basin of water and soap for him to wash his hands or escort him to the bathroom and see that clean linen is provided.

It is now time for some form of light nourishment for the patient, which the nurse prepares herself in the kitchen of the home. A bit of thoughtfulness concerning the rest of members of the family is often a valuable part of the service she renders in the home. She can often persuade the tired mother to take a much needed nap. If special food is to be ordered she will see that someone going to the store gets this before the time for the meal to be served. It may be necessary at this time to give an extra dose of encouragement to her patient. Soon it is time for her to serve the midday meal.

The balance of the day is filled up with all types of services intended for hastening the recovery of the patient, always being thoughtful of each member of the household, remembering that each, is disturbed because of the illness of the loved one. Unless she is followed by a night nurse she will give the patient bedtime care before she leaves. She does not leave a room untidy when it is time for her to go.

We have followed this private nurse through the usual, daily routine in a home, but the service in a hospital is not very different. *Yet, we have not seen that she was called upon to recite the history of nursing, to give the formula of water, hydrochloric acid or sodium bicarbonate, to name the* 12 *cranial nerves, to read a Shakesperean play or work a problem in geometry;* but she is a good nurse. The patient, doctor and relatives are all satisfied. Let us recognize this fact and not require nurses in training to spend a great deal of time in learning things in no way essential to the proper nursing care of a sick man, woman or child.

THERAPEUTICS

J. Fred Nash, M.D., *Editor,* St. Pauls, N. C.

General Practitioner and Eye, Nose and Throat Diseases

(L. J. Birsner, St. Louis, in *Jl. Kansas Med. Soc.*, Aug.)

Each one of you, with a few simple things, with a little study, can make a thorough examination of the ear, nose and throat.

The word *specialist* should never have been coined. Preparation for limited practice must be a matter of years, and one should not make his fees high. Purchase 2 books, Thomson and Negus' *Diseases of the Nose and Throat*, published by D. Appleton-Century Company, and Kerrison's *Diseases of the Ear*, published by J. B. Lippincott Company. Slowly read them, and you will gather an immense amount of information that you can utilize in your daily practice.

If you have not equipped your office to make a complete eye, ear, nose and throat examination, you are far behind the times.

In upper respiratory infections—absolute rest in bed, 3000 c. c. water (superior to any fruit juices), a high-calorie diet, a very light laxative (no saline laxative), ephedrine hydrochloride, ½ of 1% in normal saline solution, one dropper full in each nostril 3 times a day.

Everyone of you should learn to use the ophthalmoscope, the otoscope, the post-nasal mirror and the indirect laryngeal mirror. It is inexcusable for you to be ignorant of nasal allergy or nasal sinusitis, or that you treat a man for hoarseness for even a week, without *knowing* that this is not a cancer. I mean, be able to see the entire larynx. If edema or swelling obscures your view, repeat the examination over and over after cocainization.

A doctor's office in a small community must be thoroughly equipped. It corresponds to an ambulance company dressing station in the war. It can handle all emergencies and do it right. The man who goes away and takes a course, cleans up his office and adds the latest equipment, usually has the brains to use them. Better facilities to work make a good doctor do better work.

For a long time I was coddled by older men with the idea that this man does not have good hands, does not have the proper touch, cannot feel tissues properly. To me this is ridiculous.

When you go home look to see who does the refractions and the major part of the eye work in a small city. You will see that an oculist, who should do it, does not. It is being done in the jewelry store—in the larger city in the department store.

As a rule you can, with a little tact, examine both ears very thoroughly and not disturb the child in the least. You can usually examine the nose fairly well without a riot, but the average youngster regularly puts up a struggle when you try to get a good look at the throat.

Few practitioners realize the role played by an acute middle-ear infection in the course of an upper respiratory infection, or in measles, or scarlet fever. The least bulge of the drum membrane requires incision immediately under nitrous oxide or ethyl chloride. Then have the mother or the nurse wash this ear with hot saline as soon as the child quiets down, to dislodge any blood clot, repeating every 4 hours for the first 3 days. Usually irrigate the ear 3 times a day with hot saline, dry and apply vaseline to the external auditory meatus. After 10 days I discontinue all irrigation, and for the next 3 weeks do nothing but dry cleansing of the canal. Not to check the hearing daily by a few spoken and whispered words is missing the danger points in the treatment of acute middle-ear diseases.

It requires little skill to make simple hearing tests with a tuning fork. A C-256, or C-512 is necessary to make bone conduction tests. When bone conduction increases over air conduction, I worry a good deal. Although the general condition may become perfectly normal, local damage is so great as to cause serious hearing loss.

Aural discharge must daily become less and at no time

have a foul odor. The moment the applicator has the least touch of necrotic odor I do a simple mastoid operation. During this stage tonsils and adenoids and the upper air cells must be brought into the best possible condition. The patient must be shown how to blow the nose; it must not be left to his judgment how this should be done.

X-ray films on subsequent days during the course of acute middle-ear and mastoid disease give valuable information. Progressive destruction of the trabeculae of bone in the mastoid cellular elements to me means mastoid interference.

A chill does not always mean a thrombophlebitis of the lateral sinus; it means that until proven that it is pyelitis, or nephritis or acute upper respiratory infection. It may mean erysipelas, but *it means a blood-stream infection until proven otherwise.*

Pain in the area of distribution of the 5th nerve in an ear infection does not always mean a petrous infection but it is a bad sign. Headache, restlessness and photophobia are very serious signs, and at this stage I would do a lumbar puncture.

Papilledema, in acute ear disease, regardless of the severity of other clinical findings, is bad. It tells that we are beginning an internal hydrocephalus, and I begin to think of a blocking of the great veins of Galen. I know that I am in for trouble, most likely a fatality.

Treatment of Hypertension

(H. Glassman, Brooklyn, in *Med. Rec,* June)

Rest, both mental and physical, and dietary regulation are basic requisites. In addition, a safe drug with persistent, rather than transitory action, is highly valuable.

Hepvisc, a synergistic combination of *Viscum album* (European mistletoe) extract, hepatic substance and insulin-free pancreatic substance, meets these needs. It appears to act by causing peripheral vasodilatation with sustained lowering of blood pressure as long as the medication is continued. Even after withdrawal, the hypotensive effects, in most cases, persist for weeks.

Marked relief of headaches, dizziness and tinnitus, is obtained in well over 80% of cases. Treatment should be continued for two to three weeks, with a week's interval between courses. In our studies, six hepvisc tablets daily, two one-half hour before each meal, was the dosage used; but this dose, where necessary, could be doubled without any danger or untoward effects.

The average systolic b. p. prior to hepvisc tablets was 172 (average of 4 readings), during hepvisc 144 (average of 11 readings), and after discontinuing it 138 (average of 7 readings). The average diastolic b. p. prior to hepvisc was 109 (average of 4 readings), during hepvisc 92 (average of 11 readings), and after discontinuing it 89 (average of 7 readings). Headaches and dizziness exacerbated when a placebo was substituted for hepvisc. Tinnitus did not return.

The Management of the Asthmatic

(M. B. Cohen, Cleveland, in *Ohio State Med. Jl.*, Aug.)

Having determined that the patient has bronchial asthma, how shall we manage him?

1. Environmental—Place the patient in a relatively allergen-free room for from 7 to 10 days. If the attacks disappear, the patient has extrinsic inhalant asthma.

2. Dietary—While in the controlled environment, give a milk and banana diet for 2 or 3 days, plus purified vitamins. If no change give some other limited diet containing neither milk nor banana, fortified with vitamins for another 2 or 3 days. If clears up we are dealing with a case of ingestant asthma; if not may be organic changes in the bronchial tree or bacterial sensitization—intrinsic asthma.

If on combined environmental and dietary control or either alone acute attacks cease but has residual cough, wheezing or expectoration—combined extrinsic and intrinsic asthma.

When all symptoms cease on environmental control (80% between 15 and 40 years of age will do this), proving extrinsic inhalant asthma, consideration of contacts and of the relative importance of various substances in causing asthma in general will suggest guilty agent; *e. g.,*—if on coming from controlled environment and sleeping on his own bed attacks recur and again cease in removal to the dust-free environment, the proof is obvious.

Skin test with feathers, house dust, cottonseed and other substances suspected. If a positive test, contact with the substance giving the reaction should be avoided. This substance may be present in other rooms of the house. It may not be possible to avoid it completely. Specific therapy should, therefore, be given to raise the patient's tolerance high enough to protect against the casual contacts with the offending allergen. In the case described, let us assume that a positive reaction is obtained to house dust. The bedroom has been rendered dust-free. Since house dust is in all stuffed furniture, mattresses and pillows, these furnishings in the rest of the house must be vacuum cleaned thoroughly daily, while the patient is out of the house. A housewife who must do her own cleaning must wear a mask while cleaning and dusting. *Injections* of house dust are imperative, after taking all these precautions since our patient is certain to visit other homes.

All asthmatic patients should be taught to give themselves hypod injections. The solution (epinephrine) used must be crystal clear and colorless. The slightest tinge of color means some potency lost. Of epinephrine base in vegetable oils subcutaneous or intramuscular injection of from 0.5 to 2.0 mgm. gives a much longer effect. A dry syringe must be used for injections of epinephrine in oil.

A large experience with ephedrine has proved of less value than was expected. Except in rare instances, a full therapeutic dose will not relieve a severe paroxysm of asthma. It is helpful in continuous dose in preventing mild seizures and controls the wheezing, also some cases of urticaria. In most patients, given alone, it produces wakefulness, bad dreams, weakness, nausea, sweating; in some, cardiac irregularity; in older men, symptoms of prostatic obstruction. The cerebral symptoms can be controlled by 5 to 10 mgm. phenobarbital with each 50 mgm. ephedrine hydrochloride, 4 times daily evenly spaced between arising and retiring. Extra doses are useless. Epinephrine should be given for an attack.

The smoke of 1 gm. of stramonium leaves is said to contain 0.3 to 0.5 mgm. atropine. Most asthma cigarettes and powders are stramonium and pot. chlorate, though some contain tobacco, lobelia, anise and other volatile substances. In some patients, the relief is prompt; in others no relief is obtained.

Iodides are useful between acute paroxysms, particularly in asthmatics with secondary bronchitis. Absorbed with amazing rapidity, their full effect is obtained by oral administration and there is no justification for the intravenous route.

These patients need more vitamins and minerals than do non-allergics to maintain a normal metabolism.

Injections are made into the arm veins rather than the leg veins for more reasons than greater accessibility. Thrombosis is more apt to follow this use of leg veins.

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHEN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

JOHN LOCKE

(1632-1704)

THIS physician, philosopher, teacher, statesman was born in 1632 at Wrington, Somersetshire. After study at Westminster School he entered Christ-Church, Oxford University, where he afterward became lecturer in Greek, Rhetoric and Philosophy. After considering studying theology for his life's work, he decided on medicine and entered the medical school of Oxford University where he became a close friend of Dr. Robert Boyle and the great Dr. Sydenham. He worked actively with Boyle in the discovery of Boyle's Law. Locke was such an admirer of Dr. Sydenham that he often accompanied him on professional visits, not only to learn about the practice of medicine from him but for the sheer pleasure of being in the company of such a man.

Later a friendship grew up between Locke and Lord Ashley—soon to become the first Earl of Shaftesbury. These two men were each so greatly interested in the whole principle of liberty—civil and religious—that they made it a common cause which welded their friendship, a friendship that continued throughout their lives. In 1667 he became private as well as official secretary to Lord Ashley and acted as family physician, confidential adviser and tutor for the family.

His early writings all dealt with the general subject of freedom. One of his first papers was entitled The Roman Commonwealth. In 1666 he wrote the Essay Concerning Toleration. Locke cast his lot with Shaftesbury and when Shaftesbury fell Locke was compelled to leave England. He went to France where he spent three years mostly at Montpellier and Paris. Here he had the good fortune to meet many men prominent in science and letters. In 1679 he returned to England and resumed his old relationships with Shaftesbury. However, in 1682 Locke retired to Holland which was then a popular place for exiles in search of liberty of thought. He spent approximately five years in Holland and then returned to England where he soon became one of the most famous men of the world. Shortly after returning to England he was offered the Embassy to Brandenburg but declined and accepted instead the modest office of Commissioner of Appeals.

In 1685 he published his defense of religious liberty in the Epistole de Tolerantia, which was soon translated into English. Then followed the publication of his Two Treatises of Government which made a stirring defense of the right of sovereignty in the people.

Locke made great contributions in the field of social science, especially noteworthy in this field is his Treatise on Government. In the field of religion, his most important work was Letters of Tolerance; in education, Thoughts on Education; in philosophy, The Essay on the Conduct of the Human Understanding. The last, written during his exile in Holland, was published in 1706, two years after his death. This essay alone would place him among the leaders in the field of modern psychology.

It is interesting to note that Locke wrote the first constitution ever framed for North Carolina. His opinions as a statesman were sought by the Lords-Proprietors and they commissioned him to prepare a constitution for Carolina. He submitted to them that famous instrument which has become known as Locke's Fundamental Constitution or The Grand Model of Government. This was adopted and signed by the Lords-Proprietors on July 21st, 1669. In this constitution he

argued for religious liberty on a far greater scale than was then accorded the citizens of England. His opinions as expressed in this constitution were in conflict with the opinions of royalty. This document was so far ahead of its time in advocating democratic principles that Locke was obliged to flee to Holland for safety.

Nor was this constitution suitable to the people of Carolina because it held to the old principle of classes, as obtaining in England, to which the people in America strenously objected. However, it was valuable in many ways and received a great deal of praise in Europe. In all, there were one-hundred-and-twenty sections of the Grand Model and every part of the entire document was to remain sacred and unalterable forever.

He was likewise distinguished as an educational theorist. He was among the earliest, after the Greeks and Romans, to emphasize the value of a sound body as the physical basis for a sound mind. In his discussion of education he went into details concerning small matters. For example, he said that children would inevitably walk in water and therefore children should wear shoes with holes in them so that their feet might dry out more readily and protect the body against cold. He was one of the first to champion the idea that all knowledge comes from sensory experience, holding that at birth a child's mind is comparable to a clean blackboard and that knowledge is written on that board (the mind) through sensation reaching it by way of sensory experience.

While Locke was not what we would consider a successful physician, undoubtedly his medical knowledge influenced his entire field of intellectual activity.

Following in the footsteps of Bacon, he stated that incorrect thinking was due chiefly to three causes: first, dependence upon others; second, self-interest; and third, too-limited experience. He also held that as an educational objective breeding, learning, wisdom and virtue constituted the chief elements; but that the greatest of these was virtue, and that the foundation principle of this is "that a man is able to deny himself his own desires, cross his own inclination and purely follow what reason directs as best, though the appetite lean the other way."

ALBRECHT VON HALLER

(1708-1777)

GARRISON, in his History of Medicine, says that von Haller was "the greatest systematist after Galen, one of the most imposing figures in all medical history, ... the master physiologist of his time." He was born in Berne, Switzerland, and it is said that he was writing Latin verses at the age of ten. He first studied medicine at Tübingen and then at Leyden, being graduated from the latter University in 1727. His graduating thesis in medicine provoked a great deal of discussion. There had recently been discovered what was described as a salivary duct and von Haller's thesis proved this to be a blood-vessel.

Soon after graduation he was called to the new University of Göttingen where he taught for seventeen years. It is said that he taught practically every branch of medicine. He wrote some 13000 scientific papers and did a great amount of experimental work during these seventeen years. He won fame as a physiologist, as an anatomist and as a botanist. Among his contributions to experimental physiology was his work which established contractility as a specific property of muscles tissue; likewise, he showed that sensibility is an exclusive property of the nervous system. He also ably discussed the myogenic theory of muscle contraction; and he made exhaustive studies on the functions of the bile.

He published valuable experiments on the mechanism of respiration and on the automatic property of the heart. In 1757 he published a volume entitled Elementary Physiology of the Human Body.

Although doing the work of several men in the field of medicine, von Haller made distinguished contributions in the field of literature, especially of poetry

and historic novels. His Versuch Schweizerrischer Gedischte caused "the famous quarrel between Bodmer and Gottsched as to the relative merits of the natural and the artificial in poetry."

The best of his novels are Usong, published in 1771; Alfred, in 1773; Fabius and Cato, in 1774.

His best-known poem is Die Alpen. In this poem he described the beautiful scenery of the Alps and the simple life of the Alpine people. This poem did more than anything else to attract the attention of the people of the world to The Alps and has immortalized Alpine scenery.

It is little wonder that a man who had done so much in so many fields and had done it so well, should be described by one of his admirers as "the portal to modern times."

TOBIAS GEORGE SMOLLETT
(1721-1771)

Smollett first attended Dumbarton School, Scotland, and then went to the University of Glasgow. After qualifying for a learned profession in this University, he was apprenticed to a surgeon in Glasgow in 1736. But even at this time he had an itch for writing and at eighteen he wrote the play, The Regicide. This was his first attempt at writing, and his poorest. The failure of this play seemed to worry him throughout his life. Discouraged because he could derive no money from this work, he took the examination in surgery and obtained an appointment as Surgeon's Mate on H. M. S. Cumberland and served throughout the siege of Cartagena. It was probably this experience that gave him his knowledge of the English sailor and enabled him to be one of the first, if not the very first, of writers of seafaring stories. His first novel, Roderick Random, a description of this voyage as ship surgeon, graphically describes the hardships of the sailors and the soldiers during the campaign.

But Smollett still had a desire to practice medicine and he hoped that he could combine the practice of medicine and writing. So, on his return from this voyage he again took up this study, this time at Aberdeen, and received the M. D. degree in 1750. He immediately began the practice of medicine in earnest; but we soon find him writing again, and in 1751 he published his second novel, The Adventures of Peregrine Pickle, which was an immediate success. He continued to practice medicine for two years and in 1752 he published a medical paper entitled An Essay on the External Use of Water, with Practical Remarks upon the Present Methods of Using the Mineral Waters at Bath, and a Plan for Rendering Them more Safe, Agreeable and Efficacious.

Lord Moynihan in his little book, Truants, says that Smollett "had an important share in the revision of Smellie's Midwifery, the standard book of that time."

In 1753, after the publication of his third novel, Ferdinand Count Fathom, he gave up medicine and devoted his whole time to writing.

In addition to his original writing he edited several magazines. In 1768 he published The History and Adventures of an Atom.

In 1770 he moved to Leghorn, Italy, and there wrote his last and best novel, Humphrey Clinker. He lived only a year after reaching Leghorn, dying at the age of fifty.

OLIVER GOLDSMITH
(1728-1774)

Oliver Goldsmith, known to his friends as The Ugly Duckling, is noted as a man of astonishing contradictions; but he is universally loved—perhaps not less for his many faults than for his abundant virtues. As a man, Goldsmith impresses us by his whimsical shifting from one interest to another, his ludicrous but innocent blundering, the unquestionable goodness of his intentions, and his innate

kindness and sympathy. He appears as a buffoon or "an archangel slightly damaged," as one happens to see him. As a writer, he impresses us by his range and versatility, by the vast amount of mere hack work, and by the excellence of his best writings in the four great fields of literature—the essay, prose fiction, poetry and drama. No history of literature can ignore Oliver Goldsmith, and no collections of literary masterpieces can be complete without the inclusion of his "Citizen of the World" essays—The Vicar of Wakefield, She Stoops to Conquer and The Deserted Village.

Goldsmith was one of eight children of an Irish clergyman, and his life was one of many financial difficulties.

Entering Trinity College at fifteen, he left there with the B. A. degree testifying to a competent knowledge of the classics, but with no special aim in life and no money. He taught but soon grew tired of that. His uncle gave him money to study law in London but he lost it at cards and returned home. A gambler from boyhood, vain, extravagant, always in debt, when he did have money he used it to help those in distress. So his faults are largely those of the generous, open-hearted man, and he remains one of the most delightful figures in our English literature.

At the age of twenty-four he entered Edinburgh University to study medicine. It is said that he often failed to attend classes but that he was a hard student, nevertheless. After two years studying medicine in Edinburgh he went to Leyden, in 1752 for a year of medical lectures. Following this he traveled a good deal throughout Europe and earned his lodging and meals by debating at various universities and colleges and singing and playing his flute at village festivals and in roadside cottages. After wandering about for two years, he returned to England and early in 1756 landed at Dover and walked to London. There he served first as assistant druggist and then as tutor in a school. Later he met a fellow Edinburgh student, Dr. Fenn Sleigh, who helped him start medical practice in a small way at Bankside. He had little practice but ample time for writing. Toward the end of 1757, through a good friend, he received an appointment as medical officer to East India Company, salary 100 pounds sterling, with expectation of private practice making it up to 1000 pounds sterling. For some reason this never materialized.

In 1765 he again attempted practice of medicine, this time in much grander style that at Bankside, but again patients were lacking and after a few months he gave up his connection with medicine forever. Notwithstanding his apparent failure as a medical practitioner, he rendered distinct service to the medical profession in bringing to the attention of physicians Auenbrugger's method of percussion. Goldsmith popularized this discovery or method through his review in 1761 of a Latin treatise, which had just been published in Vienna, describing this clinical method. His essay was entitled Auenbrugger's Discovery of Percussion.

In the time of Goldsmith, "medical cures" for diseases were widely advertised and used. The apothecaries would not allow the doctors to out-do them, and, while the doctors were letting blood by pints and quarts, the apothecaries were prescribing medicine by ounces and pounds.

A preparation of that day still used is Dover's powder—one part ipecac, one part opium; eight parts sugar of milk. Perhaps the most widely advertised patent medicine of that day was Dr. James' Fever Powder. Goldsmith had the utmost confidence in these powders. His friends said that he had such faith in Dr. James' Fever Powder to reduce temperature that if he were in a house on fire, he would take the powder and sit the fire out. These powders were advertised as "genuine medicine" and you will remember that was the day of large doses. There is no question that an overdose of this powder killed Goldsmith.

The apothecary who put up Dr. James' Fever Powder issued a pamphlet entitled

An Account of the Late Dr. Goldsmith's Illness So Far as It Relates to the Exhibit of Dr. James' Powder.

This pamphlet bore the sub-head

Remarks on Uses and Abuses of Powerful Medicines in The Beginning of Fevers and other Acute Illnesses, by William Hawes, Apothecary.[2]

This pamphlet went through three editions. It was generally thought that this powder contained some form of antimony, probably tartar emetic.

In connection with Dover's powder, which is used today, it might be interesting to recall that Thomas Dover was at one time a servant of the great physician Sydenham. Dover decided that he could make more money by joining the English Buccaneers and was induced to promote an expedition of adventure and pillage to the South Seas. Two ships were in this expedition. It appears that Dover had large financial interests in the undertaking and on this account was third in command with the title of Captain. Dover led the assault in a successful attack on the city of Guayaquil and the prizes of the expedition were so numerous and rich that the ships brought home plunder said to be valued at 170,000 pounds sterling.

An interesting experience of his was the finding of Alexander Selkirk on Juan Fernandez Islands on February 2nd. 1707. Selkirk was a sailor and on his last voyage he had a dispute with the captain of the ship while nearing the island of Juan Fernandez. The captain put him off the ship and left him alone on tthe island where he remained for four years until he was found by Dover, who picked him up and carried him to England. It appears that Selkirk and DeFoe were guests at a dinner in the home of Mrs. Damaris Daniel at Bristol, that Selkirk told the story of his adventure upon this island and this was the foundation of DeFoe's Robinson Crusoe. It also appears that DeFoe had more than just the verbal story of Selkirk's adventure, because some time after the dinner Selkirk told Mrs. Daniel that he had handed his papers over to DeFoe. Apparently he had written in a crude way an account of his adventures.

After a few years of this roving and romantic life, Dover settled down as a physician and became a free-lance. He spoke of the College of Physicians of that day as a "clan of prejudiced gentlemen." He was very successful financially as a physician and wrote a book containing a record of his cures and remedies used, and it was in this book that he described his "sweat-producing powder." He went on the basis that if a large dose would do good, larger doses would do more good and he gave such large doses of mercury that he was known as the quicksilver doctor. He says in his book that he gave doses of Dover's powder of from sixty to one hundred grains. Today we consider three to five an average dose. Of course the doctors were generally opposed to him and even the apothecaries advised their patients to make their will before taking his medicine.

However, it was Dr. Joshua Ward who really made Dover's powder a famous remedy after the death of Dover. Dr. Ward became a protege of George II of England and, under the patronage of this king, he established a hospital and ministered to the poor people free of charge. Dover's powder was one of his chief remedies.

Returning to Goldsmith, when we consider him from every angle, one is prone to think of him as Hamlet said of his dead father, "Take him for all in all, I shall not look upon his like again." It is unlikely that we shall ever again see as unique a character as Goldsmith.

1. Newton, A. Edward, A Magnificent Farce. *The Atlantic Monthly Press*, N., Y. 1926

JOSEPH IGNACE GUILLOTIN
(1738-1814)

Unfortunate it is that the official method of capital punishment in France has become associated with the name of Dr. Guillotin because it may lead one to think that he was a cold-blooded man, whereas he was in fact greatly interested in social welfare and one of the earliest of humanitarians. Decapitation had been used long before the time of Dr. Guillotin. There is an account of an execution by this method of Marshall Montmorency at Toulouse, France, in 1632; but it had fallen into disuse and less inhumane methods had supplanted it.

Dr. Guillotin, an active practitioner of medicine in Paris, along with everybody else in his city in the time of the French Revolution, had an active concern in the political conditions of the period. He was an ardent supporter of The Revolution and joined the Jacobins. In 1789 he was elected to the Constituent Assembly and in the same year proposed to the Assembly that "in all cases of capital punishment it shall be of the same kind—that is—decapitation—and it shall be execution by means of a machine."

It must be remembered that up until this time excution by decapitation was confined to the punishment of nobles and was a hereditary privilege, and that the criminals from the ordinary classes were put to death in the most cruel ways—as drawing and quartering and so on. It was Dr. Guillotin's idea that all classes of people should be subjected to the same method of execution and that this method should be as swift and as painless as possible. So, instead of associating Dr. Guillotin with cruel procedure we should thing of him as one trying to prevent cruelty. The adoption of Dr. Guillotin's proposal took away from the rulers the power to torture their victims and obtained equality of treatment for all persons, regardless of their position in the social or political scale.

Dr. Guillotin always hated the idea of his name being associated with this instrument of execution. For a time it was known as La Louisette, from the name of its inventor, but after this method of execution was made the official method through the activity of Dr. Guillotin it inevitably became linked with his name.

ITEMS FROM NATIONAL TUBERCULOSIS ASSOCIATION

Teach the tuberculosis patient to regard symptoms as red and green signal lights and not something to worry about.

Climate in Tuberculosis Treatment—Certain climates are beneficial mainly to the extent that they permit patients to spend a maximum number of hours comfortably out of doors. A regimen of regulated rest and exercise, proper food and open-air life is considered to be the fundamental essential and the part played by climate is believed to be subservient to more important considerations.

—Moriyama, I. M. and Herrington, L. P., *Amer. Rev. of Tuber.* March, 1939.

Recovery from Tuberculosis—It is important to be sure by reliable tests that the disease is arrested. Temperature, pulse-rate, blood sedimentation and x-rays should all be utilized in coming to a decision, and after there is no further progression time should be given for healing. Only then can the patient be assured that recovery has taken place and that recurrence is unlikely under the ordinary stresses of life.

—Green, J. W., *Med. Bull. Vet.*, Jan., 1936.

The bovine type of tubercle bacillus causes 10% of extra-pulmonary tuberculosis in Canadian children under 14 years of age. In every instance investigated the children had been fed raw milk. Efficient pasteurization of milk would eliminate bovine tuberculosis in five years. It has been estimated that the number of infected animals is now less than 30% in Canada.

—Price, R. M., *Can. Pub Health Jour.*, June 1938.

We have an increasingly efficient public health service with a tuberculosis control program well under way in a great number of cities, counties and States, and places, developing in others. Health education has aroused intelligent public interest in the campaign. The general practitioner is recognizing as sound teaching that early diagnosis is our most effective weapon and he sees the patient first.

—Emerson, Kendall, *Jour.-Lancet*, Apr., 1939.

Tuberculosis Deaths Among Young Women—The excess of deaths from tuberculosis among young women over that of men of the same age has long been regarded as an enigma by the medical profession. In an exhaustive study made in New York and Detroit, every death during one year from tuberculosis among young women was carefully investigated and several facts emerged from an analysis of the material obtained.

School life, race, nativity, participation in industrial life, insufficient clothing, poor food habits including the ever-present dieting fads, lack of sleep and too much recreation seem negligible in their influence. The real hazard is the psychic and physical changes attendant upon adolescence and maturity. Early marriage and child-bearing increase the death rate from tuberculosis in this group.

—Nicholson, E., Study of Tuber. Among Young Women. N. T. A. *Social Research* Series 7

The Use of Tetanus Toxoid in Private Practice

(R. P. Rogers. N. Y., in *Bull. N. Y. Acad. of Med.*, Aug)

It is now a law in France that antitetanus immunization be given to all soldiers. In 1936 over 400,000 were vaccinated. A boosting dose is to be given every 5 years. They are using the formalized preparation. Reactions have been very slight. The immunity appears after the second dose.

It has been shown that two doses of 1 c.c. each of alum-precipitated toxoid given 2 or 3 months apart, or 3 doses of plain toxoid 1 c.c., 1.5 c.c. and 2 c.c. at 3-week intervals will, in 7, or at the outside 14, days after the last dose, produce a blood level as high or higher than 1500 units of the old antitoxin. A boosting dose given one to several years later will, within 7 days, bring this level back to a protective level, and often far above. The reactions to these toxoids are slight. The alum-precipitated toxoid is quite thermostable and therefore keeps well.

A blood titration test should be made 2 months after the last immunizing dose (laboratories are, or can soon be, equipped to do this.)

If injury requiring protection occurs later than 3 months after immunization, a boosting dose should be given within 24 hours of injury. Even this should not be relied on in cases of very extensive injury such as would require gas-bacillus prophylaxis or injuries with extensive hemorrhage. In these cases antitoxin should be given also.

Who should receive active tetanus immunization?

1. First of all those who are sensitive to horse serum. That means, of course, those who have had severe and moderate serum reactions from previous serum injections.

2. Asthmatic patients.

3. Other allergic individuals if their occupations or avocations carry danger of injury.

It is justifiable to give tetanus immunization to the following optional groups:

1. Children especially those living in the country or those who ride. Most cases of tetanus at present occur from trivial injuries. These cases would be prevented by such prophylaxis whether or not a blood titration were made.

2. Individuals, non-allergic, engaged in hazardous occupations or avocations.

Electrocardiogram and Practitioner

(Wright Adams, Chicago, in *Wisc. Med. Jl.*, Aug.)

The electrocardiogram is valuable in three general phases of diagnosis: 1st. the identification of arrhythmias; 2nd. the determination of disproportionate enlargement of one ventricle; and 3rd. the detection of abnormalities of the myocardium.

It furnished specific information which is frequently of great value and often cannot be obtained in any other way, but is should not dominate the clinical situation. While it gives evidence of myocardial abnormality with considerable accuracy, every instance of myocardial abnormality does not carry a bad prognosis. The danger of causing unnecessary invalidism will be minimized by considering the patient as a whole.

PROVISIONAL PROGRAM

PIEDMONT POST GRADUATE CLINICAL ASSEMBLY

Anderson, S. C., Sept. 19th, 20th, 21st

The institution at Anderson, recognized and listed by the Council on Medical Education and Hospitals of the American Medical Association, enters upon its fifth year. The central idea has been to extend the influence of the Assembly to all of the South Atlantic States by including on the faculty professors from the teaching staffs of all of the medical schools in this area. From the first the attendance reached well beyond the one hundred mark; with the ambitious program outlined this year it is expected that the attendance will reach one hundred and fifty or two hundred. Many new features are added as will be noted in the preliminary announcement herewith.

Tuesday, September 19th, 2:30 p. m.

Opening Exercises—Dr. E. A. Hines, President of the Assembly, Seneca, S. C., presiding. Welcome Address—Dr. Frank Wrenn, President of the Anderson County Hospital Association. Welcome Address—Dr. Herbert H. Harris, President of the Anderson County Medical Society. Incomplete Deficiency Syndromes—Dr. V. P. Sydenstricker, Professor of Medicine, University of Georgia, Medical School, Augusta. Diabetes and the Use of Protamine Insulin—Dr. Robert Wilson, Jr., Associate Professor of Medicine, Medical College of the State of South Carolina, Charleston. The Premature Infant—Dr. Angus Murdoch McBryde, Assistant Professor of Pediatrics, Duke University Medical School, Durham.

John C. Calhoun Hotel, 7:30 p. m.

Dinner and round table discussion of the afternoon lectures.

Evening Program, 8:00 o'clock

(PUBLIC INVITED)

Address: The Modern Conception of Contagious Dissases including Poliomyelitis. Dr. W. Lloyd Aycock, Assistant Professor of Preventive Medicine and Hygiene, Harvard Medical School.

Wednesday, Sept. 20th, 2:30 p. m.

Dr. J. M. Feder Pathologist Anderson County Hospital, presiding: Pathology—Looking Backward—30 years. Dr. T. R. W. Wilson, Pathologist Greenville General Hospital, Greenville. Ovarian Tumors—Dr. E. R. Pund, Professor of Pathology, University of Georgia School of Medicine, Augusta. Tetanus—Dr. E. B. Saye, Pathologist Spartanburg General Hospital, Spartanburg. Avitaminosis—Dr. J. M. Northington, Editor *Southern Medicine & Surgery*, Charlotte. The Effects of Analgesic Drugs on the Blood—Dr. Roy K. Kracke, Professor of Pathology, Emory University, Atlanta.

John C. Calhoun Hotel, 7:30 p. m.

Dinner and round table discussion of the afternoon lectures.

Thursday, Sept. 21st, 2:30 p. m.

SYMPOSIUM ON CANCER

Dr. J. R. Young, Chairman of the South Carolina Division of the Southeastern Surgical Congress, Anderson, presiding. Some Things We Know About Cancer—Dr. Kenneth M. Lynch, Professor of Pathology, Medical College of the State of South Carolina, Charleston. Diagnosis and Curability of Intraoral Cancer—Dr. Hayes E. Martin, Attending Surgeon Memorial Hospital. Cancer of the Stomach and Small Bowel—Dr. J. Shelton Horsley, Surgeon-in-Chief, St. Elizabeth's Hospital, Richmond. Cancer of the Breast—

John C. Calhoun Hotel, 7:30 p. m.

Annual banquet and addresses by distinguished guests.

Evening Program, 8:30 o'clock

Address: Indications for Performing Therapeutic Abortions and Sterilizing Operations—Dr. Oren Moore, Charlotte. Address: Cancer of the Colon and Rectum—Dr. J. Shelton Horsley, Surgeon in Chief, St. Elizabeth's Hospital, Richmond.

Special Scientific Exhibit

RECESS PERIOD WEDNESDAY

Dr. John Elliott of Salisbury, N. C. will demonstrate the Elliot Technic for Blood Transfusion, Blood Banking and Plasma Collection. All laboratory people are urged to attend this demonstration as Dr. Elliott's work revolutionary. All technicians are invited to the Wednesday afternoon session.

The entire Assembly has been so arranged that many physicians will be able to attend their patients in the morning hours and make the trip to Anderson for the afternoon and evening sessions.

A nominal registration fee will be charged to cover the cost of printing the programs and the annual banquet.

OFFICERS

President

Dr. E. A. Hines.....Seneca

Vice-President

Dr. Jack Parker.....Greenville

Vice-President

Dr. David Smith.....Durham

Vice-President

Dr. Jack Norris.....Atlanta

Secretary-Treasurer

Dr. A. L. Smethers.....Anderson

Registrar

Dr. Herbert Blake.....Anderson

MEDICO-LEGAL PROBLEMS

(A. W. STEARNS, Boston, in *N. Maine Med. Asso.*, Aug.)

The theories of medicine and law are quite different. The doctor seeks the truth by a process of differential diagnosis. Arraying all the possibilities before him, he gradually eliminates those which have the weaker claim until the one having the least against it and the most for it survives. Medical diagnosis is always tentative, to be changed if new information appears. Legal theory, as I have known it, is quite different. The truth is conceived as the resultant in the conflict of two opposites. Let one side amass all the information tending to support its view, however partisan this may be, and let the other side do likewise, put them to a battle of words with a judge as the referee, and what survives is the truth! There is a finality about legal decision which is foreign to medical. I shall not debate the relative merits of these two methods except to say that I prefer the medical.

I recall once when a man, who had been defending insurance companies all his life and had been a bitter enemy to plaintiff lawyers and doctors, was elevated to the bench. I remarked to another judge that I thought it would be very hard for him to be impartial in a tort cases with his background. The judge naively said. "Oh, but no, you do not understand. When one becomes a judge he lays aside all those things." One might as well say that he laid aside his whole life's work and his mind and his body, as to say that laying aside a prejuidce was an act of the will.

SUGGESTION is of universal application to all persons, while reason is a process which is exceptional even among the wisest.—WALTER DILL SCOTT, in *Psychology of Advertising*.

ROME, under Augustus, passed a law that no man who did not have as many as three children could hold public office.

CASE REPORTS

Thirty-four Cases of Urticaria Cured by Uritone*

Thomas Russell Littlejohn, M. D., Sumter, S. C.

On September 6th, 1937, a white married man, aged 40, came to me because of an itching and burning of several days duration. On getting a complete history and making an examination I found it to be the worst urticaria that has come under my observation. Adrenalin, 10 min. twice a day, and morphine sulphate and hyoscine gave no relief. He was referred to a dermatologist who tested him out and gave him a hypodermic in his arm, which he stated, made him a great deal worse. The next morning when I examined his urine, it was strongly acid, highly colored and contained many amorphous urates. I gave him two grams of uritone intravenously and in two hours he was almost entirely relieved. The next day the rash was almost gone and he insisted that I give him another dose "of the same medicine" which I did. Since that time he has had no further trouble.

That was the first of 34 cases of urticaria which have been entirely relieved by uritone. The youngest patient was 18, the oldest 63. I have never given more than two doses, that number always affording complete relief.

One case of particular interest was that of a man 26 years of age who had so very acute a case that there was some question about the diagnosis—as to whether it was ivy poisoning, there being so much edema of the lips particularly, and the genitalia. His urine was strongly acid. He said that the first dose relieved him entirely, but he came back for the second dose as an extra measure of precaution.

This report of 34 cases seems to be a great many for one man in general practice, but early patients referred many of the later patients to me. In the first case that I have reported I reasoned that acid urine would be changed to alkaline urine by uritone. Whatever the modus operandi, the chief indication was met—the patients were cured, promptly and safely, to the great satisfaction of patient and doctor. All of these cases were essentially negative in other respects. So far as I know, none of these has had a return of this trouble.

*Reported before the Sumter County Medical Association September 7th, 1939.

Simultaneous Occurrence of Spontaneous Hypoglycemia and Juvenile Tabes

(D. C. Ashton, Beckley, in *W. Va. Med. J.*, Aug)

A girl of 14, was admitted to hospital April 11th, 1938. For several months she had had seizures several times a day, from crying spells to clonic convulsions of head, arms and legs. She had a voracious appetite and seemed constantly hungry. The mother has had 10 children, the subject being the 7th. The 8th child was stillborn. Shortly after patient's birth, both parents were discovered to have positive blood Wassermann reactions and each received some antiluetic treatment.

She was restless and talkative but appeared to have normal intelligence. Examination was negative except for gingivitis, Argyll Robertson pupils and absent knee-jerks. There was no loss of vibratory sense and no definite ataxia. The spinal fluid was under normal pressure. There were 8 cells per cu. mm. Spinal fluid sugar was 50 mgs. per 100 c. c., spinal fluid and the blood Wassermann strongly positive. Blood dextrose readings were all very low even after the ingestion of the 100 gms. of glucose.

She received 3 intravenous doses of mapharsen (.02 gms.) at 5-day intervals. No appreciable change was noticed. She continued to have crying spells but did not have any definite convulsive seizures. After 14 days the parents insisted on taking her home with a promise to return. The family doctor was asked to continue therapy at home. The patient has not returned for further study and all efforts to locate her have been unavailing.

Changes in the Nails in Diagnosis and Prognosis

(R. C. Low, in *Practitioner*, May, 1939)

White transverse bands in all the nails of the fingers and toes may be a sign of acute or chronic arsenical poisoning; or, rarely a result of the administration of thallium acetate.

A slate-blue discoloration of the nail beds may be the earliest manifestation of argyria and indicates that the administration of silver, whether externally or internally, should be stopped at once.

A brownish-black discoloration, darker than in argyria, often indicates chronic mercurial poisoning. It is due to the formation of sulphide of mercury in the tissues.

Fragility and splitting of the nails may be congenital, due to prolonged contact with chemicals or too frequent manicuring. Eggshell nail, in which the nail plate is soft, semi-transparent, bends easily and splits at the end, has been reported in arthritis, peripheral neuritis, leprosy and hemiplegia. It is somewhat similar to onychia syphilitica sicca, which may be the only visible sign of late syphilis.

First Advertisement of Ice Cream

According to the *Association Quarterly* of the Dairy Industries Supply Assn., the first advertisement of ice cream in this country appeared in the *New York Gazette & Weekly Mercury*, May 19th, 1777.

A portion of this adv. reads: (The said Linzi) "will have in this present season, a very great variety of the best sweetmeats; preserves marmelades, jellies, etc. in brandy, at very reasonable rate as the times will permit, for ready money only; and everything of the said branch will be executed to all perfection as in the first shops in London.

Said Linzi will, in the ensuing season, give a very good price for the very best sort of furit, such as strawberries, gooseberries, cherries, rasberries, peaches, pineapples, green gages, apricots etc. May be had almost every day, ice cream; likewise ice for refreshing wines etc."

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D.....Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP.....Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. } .....Charlotte, N. C.

Dentistry

J. H. GUION, D. D. S.....Charlotte, N. C

Urology

HAMILTON W. MCKAY, M.D.
ROBERT W. MCKAY, M.D..... } .....Charlotte, N. C.

Internal Medicine

GEORGE R. WILKINSON, M. D. .....Greenville, S. C.

Surgery

GEO. H. BUNCH, M.D. .....Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D..... Danville, Va.
IVAN M. PROCTER, M.D.....Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D.....Richmond, Va.
G. CARLYLE COOKE, M.D.....Winston-Salem, N. C.

Pediatrics

G. W. KUTSCHER, JR., M.D. .....Asheville, N. C.

General Practice

J. L. HAMNER, M.D.....Mannboro, Va.
W. J. LACKEY, M.D.....Fallston, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D. .....
R. P. MOREHEAD, B.S., M.A., M.D.. } Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D.....Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D.....Greensboro. N. C.

Public Health

N. THOS. ENNETT, M.D.....Greenville, N. C.

Radiology

Therapeutics

J. F. NASH, M.D.....Saint Pauls, N. C.

Tuberculosis

P. P. MCCAIN, M.D.....Sanatorium, N C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

CORRECTION—In Dr. R. H. Owen's article in our August issue, the cuts shown on page 365 are not properly numbered. The picture shown above "Fig. 2" should come first; that above "Fig. 4", second; that above "Fig. 1", fourth. The others are properly placed. Our regrets for the error. —*S. M. & S.*

VACCINATIONS—FOR ADULTS AS WELL AS CHILDREN

AT this time of year children are entering school and there is much talk about disease prevention, particularly vaccination. This makes it a particularly opportune time for family doctors to go over their lists of patients, see what the records say about when the parents and other adults were last vaccinated against smallpox and the typhoids, and remind those needing protection that they should come in for renewal of such protection.

It would not be amiss to remind grown folks that the State requires that children be vaccinated against smallpox, and that France requires that her children be so protected against diphtheria; and that it trusts those grown to manhood and womanhood to avail themselves, not only willingly, but gladly and gratefully, of these blessed protective measures.

Some would lean so far back as to aver that this would be soliciting practice. The argument is unsound. In colonial times old Dr. Holyoke, of Salem, Mass., having learned of the relative mildness of smallpox by inoculation, inoculated all his patients, whether or no, with the virus of *small*-pox. That was many years before Jenner discovered and proclaimed to the world that *small*pox could be prevented by inoculation with *cow*-pox (*vacca*, a cow).

Dr. Holyoke subjected himself to the inoculation, first making his will—a reasonable action since smallpox by inoculation had a mortality of some 5 to 8 per cent; but what was that as compared with a rate of 30 to 50 per cent when acquired in the usual way? Another point to be remembered as a reason for gratitude to Jenner—and to Thomas Jefferson, who energetically exerted his powerful influence to induce his people to avail themselves of the godsend—is the fact that the protective *small*pox of the days prior to Jenner's discovery was just as apt to cause an exposed unprotected person to sicken and die of smallpox as was any other smallpox; while, as we all know, the cowpox conveyed by vaccination exposes those in contact to no danger whatever.

Family doctors who have not made it a practice to have those families under their care given pro-

tective inoculations at regular intervals, would do well to adopt the practice now, and continue it henceforth, using some device, such as recording in advance on a desk calendar, that will remind automatically to notify his patients.

Patients appreciate this evidence of interest in their welfare, and all of us need to be reminded. Not all of them will come in; but most will, and all will know that you are interested *and that you count them as your patients.*

On Curability

What a patient most wants of a doctor is cure —cure in the derived sense of restoration to health, rather than in the original sense of caring for. To promise a cure is forbidden by our code; but there is nothing wrong in saying we think we can cure in a given case, although it is usually better, when we so think, to say we look for a favorable outcome.

Sometimes we are asked if a certain disease is curable. Manifestly, in the case of a disease of any gravity, the answer must be qualified if it is to be a statement of fact. Is pneumonia curable? In some cases, yes; in other cases, no. Is cancer curable? In some cases, yes; in others, no.

To the unqualified statement, "Cancer is curable," a pertinent retort would be: Why, then, were Dr. Wm. H. Welch, Dr. A. J. Crowell and —for the newspaper accounts plainly suggest the diagnosis in this case—Dr. Wm. J. Mayo allowed to die of cancer?

We will get on much faster in curing persons of cancer when we substitute for, "Cancer is curable," a statement that we believe most cancers to be curable in the earliest stage and that the early stage may be long past before the patient feels a symptom.

Piedmont Post Graduate Medical Assembly

At Anderson, S. C., on three days of next week, will be held a session devoted to bettering the quality of medicine in this section. From near and far doctors are to gather for the exchange of information on the prevention and cure of disease.

From Boston and from Durham, from Charleston and from Atlanta, from Augusta and from Greenville, from Richmond and from Salisbury will come doctors who have made intensive studies of certain subjects in which all who have the care of human health are deeply interested. From hundreds of miles around Anderson will come specialists and family doctors to make their contributions of knowledge and to receive contributions in return.

On page 462 of this issue may be found a condensed program. It may be seen that the arrangement is such as to interfere least with the daily work of those who can not spend all of the three days in Anderson.

From the hours that President Hines opens the meeting to that of Dr. Horsley's closing address, reliable information an diagnosis and cure of the physical ills that beset us will be proffered.

THE POTTER

(to my physician)

A few subtle words, a grip by the way.—
(She knew he was kind, and she hoped he was wise.)
She listened, she spoke, she looked deep in his face,
And caught the preception that lay in his eyes.

That keen, quick preception, that deep understanding,
Fell, a softening rain, on her tight-packed heart,
Crushed and hard, and warped in its turning,
Resistant to yielding, and cracking apart.

Slowly he softened the hardness to moulding,
Slowly he poured on his strength and his calm,
Planted his fingers around it and fashioned
A heart once again that was living and warm.

—HENRIETTA WINFREY

—September 1st, 1939

NEWS

Buncombe County Medical Society

The 13th meeting for 1939 was called to order by President Griffin, on July 31st, at the City Hall at 8 p. m., 52 members present.

Guests were introduced by several of the members.

Dr. Griffin announced an invitation from the local druggists to meet with them some time the latter part of August for a picnic. This invitation was accepted by unanimous vote of the Society with expression of appreciation.

The program of the first meeting in August was briefly outlined by the secretary.

Dr. Frank H. Richardson was then asked to introduce Dr. Warren Quillian of Coral Gables, Florida, who spoke on The Incidence of Respiratory Infections in Lower Florida in the Winter Months; and Dr. Chas. Bloom, of New Orleans, who spoke on Spastic Colitis in Children. An open-air concert of Negro spirituals just outside the building provided severe competition during the time both guests were reading their papers.

The 14th meeting for 1939 was called to order by President Griffin, on August 7th, at the City Hall, at 8 p. m., 56 members present.

The minutes of the two preceding meetings were read and approved. Guests were introduced by their hosts.

The program included case presentations: Duodenal Stricture, by Dr. G. Farr Parker, The Relief of Spastic Pain by Magnesium Sulphate, by Dr. John Deyton, Menier's Disease, by Dr. C. A. Willis; Ulcerative Colitis, by Dr. L. Ormandy; Foreign Body in the Lung, by Drs. Kutscher, MacRae and Moore; Foreign Body in the Esophagus, by Dr. J. A. Moore.

Dr. J. B. Greene introduced the guest speaker, Dr. H. M. Taylor, of Jacksonville, Florida, who spoke on Harmful Effects of Swimming on the Respiratory Tract, and concluded his remarks with a presentation of exceptionally fine motion pictures on the subject.

Dr. Griffin announced the future meeting with the local druggists.

Dr. Brown made an announcement relative to the Golf Tournament to be held August 21st.

The 15th meeting of the year was called to order at the Asheville Country Club at 9:00 p.m. August 21st. President Griffin presiding, 51 members present.

Dr. Ambler presented the Golf Tournament prizes to the following winners: Dr. Brewton (cup), Dr. Kermit Brown (6 golf balls for low gross score), Dr. Brewton (three golf balls, second low gross), Dr. Beverly Douglas, Dr. C. W. Hoffman and Dr. Kutscher (one golf ball each for second low net score, high gross score, and high net score, respectively. Dr. C. L. Crump moved, Dr. Kermit Brown seconded, that the golf tournament become an annual summer event for the Society. This motion was unanimously passed.

Visitors were introduced by President Griffin, Drs. Whitehead, Grantham and Hoffman.

Dr. C. C. Orr then read the memorial resolutions for Dr. Howard L. Sumner. Dr. C. H. Cocke moved, seconded by Dr. MacRae, that these resolutions be accepted as read, a copy be spread upon the minutes of the Society, a copy sent to the press, and a copy to the family.

Dr. Ringer then introduced Dr. H. McL. Riggins, associate in medicine at Columbia University College of Physicians and Surgeons, who spoke on Tuberculosis of the Trachea and Bronchi—lantern slides and motion pictures. Dr. R. A. White then introduced our second guest speaker, Dr. Beverly Douglas, assistant professor of surgery at Vanderbilt University Medical School, who talked on Plastic Surgery of the Upper Respiratory Tract. lantern slides.

—G. W. KUTSCHER, JR., Secretary.

Dr. William P. McGuire, fourth in direct line to practice medicine in Winchester, Va., has joined his father, Dr. Hunter H. McGuire, in the treatment of diseases of the eye, in which the latter has specialized for 35 years. Their offices are in the building which the younger specialist's great-grandfather, Dr. Hugh Holmes McGuire, erected as his residence in 1826. Dr. McGuire was named for his grandfather, Dr. W. P. McGuire.

Dr. Hunter Holmes McGuire, his great-uncle, was chief of Stonewall Jackson's medical staff. The young man's great-grandfather was founder of the old Winchester Medical College.

Dr. McGuire is a graduate of the University of Virginia, served as an interne in Union Memorial Hospital, Baltimore; was a resident physician at the Institute of Opthalmology of the Columbia-Presbyterian Medical Center in New York, and has been stationed recently at the Proctor Eye Clinic in Santa Fe, N. M. He is a nephew of Dr. Stuart McGuire of Richmond.

Dr. Christine Thelen, of Madison, Wis., has been appointed college physician at Greensboro College, Greensboro, N. C. Dr. Thelen will begin her work with the opening of school, September 4th. A native of Madison, Dr. Thelen holds the B. S. from University of Wisconsin and the M. D. degree from Medical College of Virginia. She served her internship in Mercy Hospital, Cedar, Rapids, Iowa and had service in the New England Hospital for Women and Children, Boston. She succeeds Dr. R. A. Schoonover, who has given part-time service to the college for the past 21 years. President Gobbels expressed hearty appreciation of the long and faithful service which Dr. Schoonover has rendered.

Dr. R. B. McKnight, Charlotte, N. C. was elected to active membership in the American Association for the Study of Goiter at the recent meeting of this Society in Cincinnati.

Dr. W. E. Brown, of Elizabeth City, has become a member of the medical staff of the State Hospital at Morganton.

Dr. T. L. Bray, county physician of Washington County, N. C. for the past eight years, has tendered his resignation to the chairman of the board of health to take effect September 1st.

Dr. Frank Jones, a graduate of the Medical Collego of Virginia and at present doing graduate work at Johns Hopkins Hospital in Baltimore, has been appointed surgeon to the Catawba General Hospital, Newton, N. C. He will succeed Dr. H. L. Johnson there October 1st.

Dr. A. B. McCreary, has been appointed State Health Officer of Florida, succeeding Dr. Wilrur A. McPhaul, who died August 1st. Dr. McCreary, 44 years old, is a native of Louisville ,Ky. During 15 years of health work in the South he served in Richmond County, N. C., Eastville, Va., and Memphis, Tenn. He also was director of the bureau of epidomiology for the North Carolina State Board of Health.

It will be recalled that Dr. McPhaul was born in Robeson County, N. C., and that he served Charlotte as Health Officer for a number of years.

Dr. Marvin B. Poole, who has completed an internship in Rex Hospital, Raleigh, has associated himself with Dr. J. R. Johnson and Dr. W. W. Stanfield in Dunn.

Dr. P. C. Jurney, of Turnersburg, North Carolina, lately spent a few days in Richmond.

Dr. Frank Allen Jones was recently awarded a certificate of Exemplary Service and a fifty-dollar cash prize at the University of Pennsylvania Graduate Hospital, where he is serving an interneship. Dr. Jones is a native of Cofield, North Carolina, and a graduate of Jefferson Medical College.

Dr. Brodie C. Nalle, Jr. of Charlotte, now interning at Duke Hospital, will later become an interne in Bellevue Hospital in New York.

Dr. Thomas B. Spencer, of Charlotte, a recent graduate of McGill University, will serve an interneship in the Presbyterian Hospital in New York.

Dr. Eben Alexander, Jr., Knoxville, a recent graduate of the Harvard Medical School, will serve an interneship in the Peter Bent Brigham Hospital of Boston.

Dr. Meyer Vitsky, Richmond, announces the removal of his office to 1108 West Franklin Street. Practice limited to Obstetrics and Gynecology.

Dr. William de B. MacNider, Dean of the School of Medicine of the University of North Carolina, recently visited friends in Richmond.

Dr. Fleete S. Steele, of the United States Navy, is temporarily stationed at Norfolk. He lately visited relatives in Statesville.

MARRIED

Dr. Edward E. Haddock, of Richmond, and Miss Katherine Lois Scott, of Red Wing, Minn., were married July 31, in Fredericksburg. Dr. Haddock is now on the house staff of the hospital division of the Medical College of Virginia. The couple will make their home in Richmond.

Dr. Robert E. Stone, of the University of North Carolina, and Miss Frances Blakeney, of Monroe, were married on July 31st.

Dr. Charles Burdis Davis, Jr., and Miss Margaret MacRae Williams, both of Wilmington, were married on July 15th.

Dr. Edwin Hale Thornhill, of Durham, and Miss Pattie Marie Sills, of Nashville, North Carolina, were married on July 21st.

Dr. Carl Scott Lingamfelter, Jr. and Miss Marguerite Mae Clarke, of Dumbarton, Virginia, were married on August 5th.

Dr. Alban Popineau, of Plymouth, and Miss Jeannette Edwards, of Ayden, North Carolina, were married on on August 30th.

Dr. Fred G. Patterson, of Chapel Hill, and Miss Julia Baylor Shirley, of Richmond, Virginia, were married on September 5th.

Dr. John Dean Fritzgerald, of Roxboro, and Miss Betty Kathlyn Offerman of Durham, were married on September 5th.

Dr. John Cole Burwell, Jr., of Greensboro, and Miss Jeannette Dorst, of Austin, Minnesota, were married on July 22nd.

Dr. Jefferson Davis, of Norfolk, and Miss Frances Little, of Statesville, were married on July 22nd. Dr. Davis is a member of the Medical Corps of the United States Navy.

DEATHS

Dr. Lawrence Taylor Price fell to his death at noon August 15th from his office on the fifth floor of the Professional Building, Richmond. Dr. Price, subject to heart attacks for some months, suffered a severe attack just before noon, and sent an attendant from his office to summon Dr. McC. Tompkins from the floor above. When she and Dr. Thompkins returned, the room was vacant and Dr. Price's body lay in the areaway below.

Dr. Price went to the window for air. It is thought that he was either dead or unconscious when he fell from the window at the rear of the building.

Dr. Price was urologist at Johnston-Willis Hospital and was chief of staff at the City Home Hospital. He also was a staff member at Memorial, St. Philip, Dooley, Sheltering Arms, Retreat for the Sick Hospitals and at Tucker Sanatorium. He was consulting urologist for Westbrook Sanatorium, Pine Camp Hospital and the Southside Community Hospital at Farmville. He was a member of the Richmond School Board from 1908 through 1913, a member of City Council from 1922 to 1930 and retired in June, 1915, as a major in the First Batallion, First Infantry, Virginia National Guard.

Dr. Robert L. Cater, of Greensboro, died August 8th of a heart attack. Dr. Cater was a native of Perry, Ga., and there he was buried.

OUR MEDICAL SCHOOLS

Medical College of Virginia

New faculty appointments: Dr. Richard W. Fowlkes, Associate Professor of Dermatology, and Dr. Patrick H. Drewry, Assistant Professor of Neuropsychiatry. Doctor Drewry will be on leave of absence until February 1, 1940, for special work in neuropsychiatry in England. Miss E. Louise Grant has been appointed Dean of the School of Nursing, and Miss Esther L. Moyer, Assistant Professor of Nursing.

Other appointments in the schools of medicine, dentistry, pharmacy and nursing are given below.

Dr. R. A. Berger	Associate in Radiology
J. R. Blalock	Neuropsychiatry
A. L. Carson	Obstetrics
David Farnsworth	Anatomy
E. T. Gatewood	Otolaryngology
Oscar L. Hite	Medicine
T. E. Hughes	Otolaryngology
Paul Larson	Physiology and Pharmacology
L. J. Roper	Preventive Medicine
L. L. Shamburger	Obstetrics
C. D. Smith	Radiology
Miss Frances Powell	Operating Room Technique

ASAC

ELIXIR ASPIRIN COMPOUND

Contains five grains of Aspirin, two and a half grains of Sodium Bromide and one-half grain Caffeine Hydrobromide to the teaspoonful in stable Elixir. ASAC is used for relief in Rheumatism, Neuralgia, Tonsillitis, Headache and minor pre- and post-operative cases, especially the removal of Tonsils.

Average Dosage

Two to four teaspoonfuls in one to three ounces of water as prescribed by the physician.

How Supplied

In Pints, Five Pints and Gallons to Physicians and Druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

Dr. J. H. Bonner	Instructor in	Preventive Medicine
Harry Brick		Neuropsychiatry
George B. Craddock		Medicine
Miss Maude S. Farley		Radiology
Dr. James D. Hamner		Preventive Medicine
Miss Rebecca Holt		Bacteriology and Parasitology
Dr. J. B. Porterfield		Preventive Medicine
Charles Savage		Preventive Medicine
W. D. Tillson		Preventive Medicine
Elam C. Toone, Jr.		Medicine
Miss Eva Connor	Instructor	and Superviser of Obstetrical Nursing
Elizabeth K. Ryan	Instructor	in Nursing
Lorena Spivey	Instructor	and Superviser in Surgical Supply Nursing
Dita Steele	Instructor	and Superviser Outpatient Nursing
Mrs. Lois Woodward	Instructor	in Nursing
Dr. Roger S. Williams	Assistant in	Neuropsychiatry
James O. Burke		Medicine
A. M. Earle, Jr.		Pediatrics
Everett I. Evans		Surgery
Mr. J. A. Eyres		Radiology
Dr. F. J. Kroncke		Medicine
E. J. Lefebre		Pathology
J. P. Lynch, Jr.		Medicine
W. H. McCall		Opthalmology
J. R. Massie		Surgery
W. A. Mitchell		Pediatrics
Allen Pepple		Dermatology and Syphilology
W. E. Pembleton		Medicine
Eric C. Schelin		Obstetrics
Jack Ulmer		Neurological Surgery
Frank A. Dick		Neuropsychiatry
J. F. Phillips		Neuropsychiatry
P. R. Milton		Exodontia

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

Medical Faculty:

Dr. Arthur S. Brinkley,

Frank S. Johns, Associate Professor of Surgery to Professor of Clinical Surgery

Carrington Williams,

O. B. Darden, Associate in Neuropsychiatry to Associate Professor of Neuropsychiatry

John S. Horsley, Jr., Assistant Professor of Surgery to Associate Professor of Surgery

Howard R. Masters, Associate in Neuropsychiatry to Associate Professor of Neuropsychiatry

Henry S. Stern, Assistant Professor of Pediatrics to Associate Professor of Pediatrics

Harry Walker, Assistant Professor of Medicine to Associate Professor of Medicine

Harry J. Warthen, Assistant Professor of Surgery and the History of Medicine to Associate Professor of Surgery and History of Medicine

George Z. Williams, Assistant Professor of Pathology to Associate Professor of Pathology

S. A. Anderson, Jr., Associate in Pediatrics to Assistant Professor of Pediatrics

Harvie DeJ. Coghill, Associate in Pediatrics and Neuropsychiatry to Assistant Professor of Pediatrics and Neuropsychiatry

Louise F. Galvin, Instructor in Pediatrics to Assistant Professor of Pediatrics

C. L. Outland, Associate in Preventive Medicine to Assistant Professor of Preventive Medicine.

R. Campbell Manson, Assistant in Dermatology and Syphilology to Instructor in Dermatology and Syphilology

D. G. Chapman, from Instructor in Medicine to Associate in Medicine

J. L. Thomson, Assistant in Neurological Surgery to Instructor in Neurological Surgery

Meade S. Brent, Instructor in Neuropsychiatry to Associate in Neuropsychiatry

E. H. Williams, Instructor in Neuropsychiatry to Associate in Neuropsychiatry

James N. Williams, Instructor in Neuropsychiatry to Associate in Neuropsychiatry

W. H. Evans, Assistant in Obstetrics to Instructor in Obstetrics

J. D. Kernodle, Assistant in Pathology to Instructor in Pathology

Emily Gardner, Instructor in Pediatrics to Associate in Pediatrics

Algie S. Hurt, Jr.,

Thomas Beath, Instructor in Surgery to Associate in Surgery

Hyman Cantor,

B. W. Rawles, Jr.,

C. A. Easley, Jr., Assistant in Surgery to Instructor in Surgery

T. D. Watts,

Marshall P. Gordon, Instructor in Urology to Associate in Urology

Dental Faculty:

Dr. J. Frank Hall, Associate in Exodontia to Assistant Professor of Exodontia

Alton D. Brashear, Associate in Anatomy to Assistant Professor of Anatomy

Oliver W. Clough, Instructor in Operative Dentistry to Associate in Operative Dentistry

Pharmacy Faculty:

Mr. T. D. Rowe, Associate in Pharmacy to Assistant Professor of Pharmacy

Duke

From July 31st to August 11th the Institute for Hospital Administrators was held at Duke Hospital. The Institute was attended by administrators of seventy-two hospitals and, in addition to seminars and discussions, a series of visits were made to other hospitals in Durham and in five other towns in North Carolina.

University of Virginia

On June 7th, Dr. H. B. Mulholland spoke before the Piedmont Medical Society, meeting at Culpeper, on Rocky Mountain Spotted Fever. Dr. Samuel A. Vest, Associate Professor of Urology, spoke on The Clinical Use of Testosterone.

On June 12th, Dr. J. Edwin Wood spoke before the James River Medical Society, meeting at Arvonia, on Hypertension. Dr. H. B. Mulholland read a paper on The Common Causes of Indigestion.

Dr. Oscar Swineford, Jr. addressed the Southside Community Hospital Staff in Farmville, on July 28th. His subject was Hodgkin's Disease.

On August 7th, Dr. J. Edwin Wood spoke before the Northern Virginia Medical Society on the subject of Hypertension.

On August 29th, Dr. W. W. Waddell addressed the Rockingham County Medical Society, meeting at Lexington, on Vitamin K in the Newly Born.

BOOKS

MEDICAL CLIMATOLOGY: Climate and Weather Influences in Health and Disease, by Clarence A. Mills, Ph. D., M. D., Professor of Experimental Medicine, University of Cincinnati. *Charles C. Thomas,* Springfield, Ill. and Baltimore. 1939. $4.50.

Climate refers to average conditions over years or decades; *weather* to short-cycle changes; *seasons* are periodical variations in weather. Influence of climate on development, stature and physical and mental energy is traced. It is intimated that the development of diabetes, toxic goiter, pernicious anemia, arteriosclerosis and mental breakdown is favored by the strain of "the intense climate drive."

The death-rate from appendicitis is said to fall steadily as distance from the tropics increases, climate to be a potent force in determining the frequency of infections and the ability of the body to fight them. Atmospheric turbulence is given as a factor largely responsible for infectious attacks, and it is said that dental caries tends to increase from the source of a river to its mouth.

Studies are presented of the seasonal factors in acute rheumatic fever, on the therapeutic uses of natural and artificial climates. The Carolinas and Florida are not favored. Colonization of the climatically handicapped is advocated. The chapter on conditioning indoor environment is unusually interesting—astonishing even. World-weather is given as the main influence in producing marked tides in human health and energy. May and June are two best months for marrying; children born in February and March live four years longer than those who come into the world in other months.

It's an entertaining book; but one may be pardoned for adopting toward it the attitude of that Thomas who desired to feel with his fingers the print of the nails and thrust a hand into his side.

BAPTISM OF THE INFANT AND THE FETUS: An Outline for the Use of Doctors and Nurses: 4th edition, by The Rev. J. R. Bowen, Chaplain, St. Joseph Mercy Hospital, Dubuque, Iowa; Technical Adviser to Iowa State Planning Board and Member of its Public Health Committee; President of the Iowa-Nebraska Conference of Hospital Chaplains; Founder of the Nurses' Apostolate. *The M. J. Knippel Company,* Dubuque, Iowa. 25c.

Catholics believe that baptism is essential to salvation, for even the infant or fetus, and that, in an emergency, baptism may be performed by a person not a priest and not a Catholic. This booklet explains the need, under this belief, and gives instructions how to baptize. By carrying out the instruction here given many a doctor doing obstetrics can contribute greatly to the happiness of some of his patients.

ELIXIR
DIGESTENZYME

Contains the active enzymes and acids of digestion—Pepsin, Veg. Ptyalin, Pancreatine, Lactic and Hydrochloric acid—combined in similar proportions as they exist in the human system. These digestive agents comprise the principal known substances employed by nature in the preparation of food for assimilation.

It is a valuable aid in Dyspepsia, and diseases arising from imperfect digestion. Also particularly valuable in many forms of Diarrhoea, and Vomiting in Pregnancy.

Average Dosage

Two teaspoonfuls to one tablespoonful after each meal.

How Supplied

In Pints and Gallons to Physicians and Druggists

Burwell & Dunn Company

Manufacturing Pharmacists
Established in 1887

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request

FUNCTIONAL DISORDERS OF THE FOOT: Their Diagnosis and Treatment, by FRANK D. DICKSON, M. D., F. A. C. S., Orthopedic Surgeon, St. Luke's, Kansas City General and Wheatley Hospitals, Kansas City, Mo., and Providence Hospital, Kansas City, Kan., and REX L. DIVERLEY, A. B., M. D., F. A. C. S., Orthopedic Surgeon, St. Luke's, Kansas City General, Research, and Wheatley Hospitals, Kansas City, Kan. 202 Illustrations. *J. B. Lippincott Company*, Philadelphia, Montreal, London. 1939. $5.00

The evolution of the foot is traced with the differences in structure for tree life and for life on the ground, and best development to serve for support, leverage and shock absorption. A shoe that does not interfere with even weight distribution is the best means of insuring against foot troubles. Proper shoes, supports and exercises are important remedial agents. Corns and sweating of the feet are considered worthy of the doctor's attention. There is a chapter on constitutional diseases as affecting the feet. Foot-strapping and foot exercises are well described.

A book of practical information on a neglected subject.

DISEASES OF THE SKIN, by RICHARD L. SUTTON, M. D., Sc. D., LL. D., F. R. S. (Edin.) Professor of Dermatology, University of Kansas School of Medicine, and RICHARD L. SUTTON, JR., A. M., M. D., L. R. C. P. (Edin.) Associate in Dermatology, University of Kansas School of Medicine, with 1452 text illustrations and 21 colored plates. Tenth Edition, Revised, Enlarged and Reset. The *C. V Mosby Co.*, St. Louis, 1939. $15.00.

The preface tells us that the aim of the book is to afford information for the cure of the ordinary diseases by any means. The chapter on general diagnosis is a condensation of valuable information; but one can describe lesions without comparing them to common articles of food. Treatment is given in great detail. Most of the ideas commonly held of the beneficial action of various drugs in various skin diseases are gone into—some to be praised, some condemned. Specific vaccines have proved disappointing. In emphasizing commonly encountered conditions, rare ones are not neglected. A great number of conditions not described in previous editions are described in this edition. An encyclopedic work that is so practical as to recommend it to the general practitioner as well as the specialist.

MANUAL OF TOXICOLOGY, by FORREST RAMON DAVIDSON, M. B., M. Sc., Ph. D., Assistant Professor of Pharmacology, College of Medicine, University of Vermont, with a foreword by DAVID MARTIN, M. D., Professor Emeritus of Pharmacology, College of Medicine, University of Vermont. *Paul B. Hoeber, Inc., Medical Book Department of Harper & Bros.*, New York. 1939. $2.50.

Written as a text for medical students and practitioners of general medicine, this is a practical book dealing with essentials. Poisoning by acids and alkalis; by metals; by gases; by alkaloids; by foods, bites and stings; and by miscellaneous poisons are covered, and a chapter added on toxicological analysis.

OUTLINE OF PSYCHIATRIC CASE-STUDY: A Practical Handbook, by PAUL WILLIAM PREU, M. D., Assistant Professor of Psychiatry and Mental Hygiene in the Yale University School of Medicine. Physician-in-charge of the Psychiatric Clinic of the New Haven Hospital and Associate Psychiatrist to the New Haven Hospital; with a foreword by EUGEN KAHN, M. D., *Paul B. Hoeber, Inc.* Medical Book Department of *Harper & Bros.*, New York. 1939. $1.85.

This outline is offered, not as the last word on the subject, but as a plan that has worked well in the hands of the author and a number of others. The value of the clinical history is dependent on the satisfactoriness of the informants and the skill of the physician. What the patient says makes an important part. No rigid rules are laid down. The outline of the mental examination is comprehensive. Physical and accessory examinations are included. Examination of the cerebrospinal fluid should be made on definite indications only.

This little book fills a long-felt want in this important field.

EPIDEMIC ENCEPHALITIS: Etiology, Epidemiology, Treatment. Third Report by the Matheson Commission. WILLARD C. RAPPLEYE, Chairman. *Columbia University Press*, Morningside Heights, New York. 1939. $3.00.

This Commission established through the generosity of Dr. William J. Matheson in 1927, collected the published data on epidemic encephalitis for its First Report in 1929. A second, shorter report of a similar nature was published in 1932.

The Third Report is along the same lines as the first two. The follow-up of a large number of patients who have had encephalitis or a simulating disease have provided a valuable text. Many of the several viruses have been isolated and vaccines have been produced and tried in treatment. Dr. Matheson wished that the work done all over the world in encephalitis be published from time to time. These Reports are in compliance with his wish.

The price of the First Report by the Matheson Commission is $3.00, and that of the Second Report, $1.50. The First, Second and Third Reports may be purchased together for $6.00.

DISEASES OF THE CORONARY ARTERIES AND CARDIAC PAIN, edited by ROBERT L. LEVY, M. D., Professor of Clinical Medicine, College of Physicians and Surgeons, Columbia University. Other contributors are: CLAUDE S. BECK, HERRMAN L. BLUMGART, ALFRED E. COHN, LOUIS I. DUBLIN, JAMES B. HERRICK, WILLIAM J. KERR, FRED M. SMITH, WILLIAM C. VON GLAHN, JOSEPH T. WEARN, JAMES C. WHITE, PAUL D. WHITE, CARL J. WIGGERS and FRANK N. WILSON. *The Macmillan Company*, New York. $6.50.

It used to be said that pain in the chest was rarely of cardiac origin. Most sudden deaths, then, following rapidly on severe chest pain, were written down as acute indigestion.

Developments of the past quarter century have changed all this. Still there is room for improvement. It is recognized that it is too soon to speak dogmatically on this subject.

Among the contributors is J. B Herrick, probably the greatest contributor to our knowledge of coronary disease. Of especial interest to Carolinians are P. D. White, of Harvard and J. T. Wearn, of Western Reserve, the latter a native of Charlotte.

Chapter heads are:

The Anatomy of the Coronary Vessels; The Physiology of the Coronary Circulation; The Pharmacology of the Coronary Circulation; The Pathology of the Coronary Arteries; Nervous Pathways Concerned in the Mechanism of Cardiac Pain; The Physiology of Cardiac Pain; Statistics of Diseases of the Coronary Arteries; Arteriosclerosis, Including Thrombosis, of the Coronary Arteries; Syphilis of the Coronary Arteries; Less Common Affections of the Coronary Arteries (Embolism, Periarteritis Nodosa, Rheumatic Arteritis, Aneurysm); The Clinical Significance of Cardiac Pain; The Electrocardiogram in Diseases of the Coronary Arteries; The Management of Patients with Arteriosclerosis, including Thrombosis, of the Coronary Arteries; The Treatment of Syphilis of the Coronary Arteries; Paravertebral Injections of Alcohol, Ganglionectomy and Posterior Rhizotomy for the Relief of Cardiac Pain; Total Thyroidectomy for the Relief of Cardiac Pain and Congestive Heart Failure; The Development of a New Blood Supply to the Heart by Operation.

This book well deserves a place in the library of every practitioner of medicine. Also, his patients deserve that their doctor be familiar with this book.

CHUCKLES

The surgeon, working rapidly, asked every few minutes how the patient was. At every request the anesthetist replied, "Very weak. Pulse getting worse." The surgeon hurried on. He again asked the patient's condition. The anesthetist looked up, sighed and replied, "Doctor, you are now doing a post-mortem."

Friends are sorry to hear Mrs. Dorothy Chase, of Hunter, is recovering from an operation in Greene County Memorial Hospital.

The other day a young fellow who had just gotten his first job as truck driver on a highway job met a luscious blonde.

"Say", he asked her, "How about a date for tonight?"

She looked at his downless face and said, scornfully, "Say, I can't go out with a baby."

"Pardon me," the young man said, "I didn't know."

"Over there," said the host, "are my grandma's ashes."

"Oh," commiserated the guest, "She's passed on, eh?"

"Just on after another pack, she's too lazy to look for an ash tray."

The stout lady on the scale in the clinic office was eagerly watched by two small boys. But the spring was out of order and the arm balanced at 75 pounds.

"Good night, Bill!" gasped one of the youngsters in amazement. "She's hollow."

A man who had lost one of his legs came to a priest who claimed the gift of healing in answer to prayer. The priest was requested to pray for the unfortunate man that his leg might be restored. This was quite a big order for the "healer." Taking the man aside, he said: "Now, my dear man, you know the Lord will restore you leg in answer to my prayers, but you should consider the consequences. You would be all right for this world, but when you get to heaven you would be burdened throughout eternity with three legs."

The new inmate in the lunatic asylum imagined himself to be a great novelist. A few weks after his admission, his friends came to inquire to the doctors how the patient was getting along.

"I am afraid he has become worse," answered one of the doctors, "he's started to writing poems, too."

READY SOON--

A BOOK ON THE CREATION, THE MAINTENANCE AND THE OPERATION OF A SMALL CLINICAL LABORATORY AT SMALL COST.

This book is now on the press.

This book is an answer to the question: How can I arrange to have needed laboratory work done for *all* my patients, and so do the kind of practice I want to do, without making a large outlay, without assuming heavy operating expenses and without heavily burdening my patients?

The author is J. M. Feder, M. D., Pathologist Anderson County Hospital, Anderson S. C. Dr. Feder's wide and diversified experience in this field qualifies him to write on technic and interpretation.

His inventivéness and his skill in improvising are exemplified by the number of small clinical laboratories already created and being operated at small cost, according to his ideas.

CHARLOTTE MEDICAL PRESS,
Charlotte, N. C.

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., OCTOBER, 1939 No. 10

The Management of Some Problems of Thoracic Surgery*

FRANK P. COLEMAN, M. S., M. D., Columbia, South Carolina

IT has become conventional and practicable to divide the field of chest surgery into surgery of non-tuberculous chest diseases, and surgery of pulmonary tuberculosis.

PULMONARY TUBERCULOSIS

This disease not only offers the thoracic surgeon, medical tuberculosis expert and, above all, you who encounter pulmonary tuberculosis daily in your medical practice, a serious responsibility, but it is still the most difficult health problem that confronts this state and this nation.

Tuberculosis is the cause of death in more individuals between the ages of 15 and 45 years than any other disease. There are more than 9,000 active cases of pulmonary tuberculosis in South Carolina today, and last year 962 persons in this state died from this disease.

The surgical treatment of pulmonary tuberculosis has made rapid progress in the past ten years, for in 1928 few physicians were using any of the known types of collapse therapy. In 1934 the American Medical Association made a survey of sanatoria in general and issued a report relative to 67,000 patients. Twenty per cent of these patients were receiving some method of collapse therapy. Only 17 per cent were arrested or apparently arrested of their disease. In 1937, Leslie and Anderson[1] made a similar review, covering a five-year period, in a sanatorium where early and intensive collapse therapy was being used. During this period 1,124 patients were hospitalized and 79 per cent received collapse therapy. Seventy-two per cent of the patients receiving this form of treatment were arrested or apparently arrested of their disease.

Approximately 80 per cent of patients admitted to sanatoria are in need of some form of collapse therapy. At the present time, there are fourteen distinct operative procedures used in bringing about a collapse or rest of the diseased area of the lung. Only brief reference will be made to the most important measures of surgical collapse.

The simplest of all collapse surgical procedures is a phrenic nerve interruption either permanent or temporary, resulting in a paralysis of the diaphragm. A temporary phrenic nerve paralysis is a revocable procedure. If the rise of the diaphragm does not accomplish the desired effect, the nerve will regenerate in from 6 to 9 months, and such a procedure will not interfere with a future recommendation. This form of collapse therapy has been abused. In too many instances the phrenic operation has robbed patients of some other treatment that had a good chance of restoring their health. The indications for a paralysis of the diaphragm are numerous, and in properly selected cases a good result can be expected.

Pneumothorax patients are handled as a rule by the internist. Fifty per cent of all patients with pulmonary tuberculosis receiving collapse therapy are receiving this form of treatment. In 20 per cent of patients who need pneumothorax it is impossible to obtain an intrapleural space. In other cases it is possible to obtain an intrapleural space; but, due to visceroparietal adhesions or some other interfering factor, the pneumothorax is ineffective in that a cavity remains open or the sputum continues to be positive. An ineffective pneumothorax without any possibilities of being made effective is a treacherous "disease" in itself. Air should be abandoned in these cases and some other collapse procedure substituted.

Thirty to 40 per cent of the cases receiving pneumothorax will require a closed intrapleural pneumonolysis to make the pneumothorax effective. This operative procedure is carried out by the insertion of a thoracoscope (an instrument similar in design to a cystoscope) through an intercostal

*Presented to the meeting of the Tri State Medical Association of the Carolinas and Virginia held at Charleston, February 20th-21st.

space into a partial pneumothorax. Through another intercostal space a cautery is inserted through a cannula and the adhesions are divided under direct vision. In general, three months should elapse during which time the pneumothorax is continued, prior to a division of the adhesions.

In a group in which pneumothorax fails and an unstable lesion contraindicates a thoracoplasty an extrapleural pneumonolysis is carried out, filling the extrapleural space with air. This method of collapse therapy, extrapleural pneumothorax, is rapidly gaining for itself an important place in the treatment of pulmonary tuberculosis. In other cases where a thoracoplasty is indicated, but the age of the patient, low vital capacity and location of the cavity contraindicate decostalization of the chest wall, the extrapleural space is developed and a paraffin pack inserted.

Oleothorax consists of the intrapleural injection of oil. This procedure finds its chief indications in cases of obliterative pleuritis and in tuberculosis empyemas.

Ten per cent of the patients admitted to sanatoria are in need of a thoracoplasty. It was their only hope of a cure prior to the introduction of the procedure, extrapleural pneumothorax. A large number still require a thoracoplasty, and this operation functions by decreasing the size and restricting motion of the operated-on hemithorax. It offers these utterly hopeless cases from an 80 to 90 per cent chance of closing their cavities with a resulting negative sputum. Thoracoplasty in general effects a more permanent cure than other collapse procedure. It is an operation of some magnitude; but, with the evolution of an improved technique, selective operative procedure and a better understanding of the indications, thoracoplasty promises to remain one of the best methods of collapse therapy.

Surgery is being successfully applied to an ever-widening variety of bilateral as well as unilateral cases of pulmonary tuberculosis. This has been accomplished by the introduction of new operations, refinement of the old operations, a better understanding of the indications and contraindications for various procedures, and by experience the limitations and capacities of these operations are more clearly defined.

The Empyema Problem

That there is an empyema problem is evident from the high mortality that follows the late diagnosis and treatment of acute empyema, and from the organic degenerations, protracted disabilities and deformities that occur in neglected cases of chronic empyema. World War experiences and the teaching of Graham did much to place the treatment of empyema upon a sound physiological and scientific basis. Little can be done to prevent the occurrence of an acute empyema; however, improper drainage, by far the most frequent cause of an acute empyema becoming chronic, is preventable. Improper drainage is chiefly responsible for persistence of pyogenic infection in the walls of the empyema cavity and for the production of excessive scar tissue on the pulmonary pleura that binds down the lung, preventing it from expanding to meet the thoracic wall and from obliterating the empyema cavity. Improper drainage may indicate: 1) too-early open drainage, too-late drainage, or drainage of too-short duration; a too-narrow a tube or none, a too-short tube, or a too-long tube; not dependent drainage; no provisions for antiseptic irrigations; and undrained pockets. Other causes of an acute empyema becoming chronic are persisting infection in the walls of the empyema cavity which may be pyogenic, tuberculous, or actinomycotic; 2) excessive scar in lung or on the visceral pleura preventing pulmonary expansion; 3) bronchopleural fistula; 4) communication with neighboring structures such as by osteomyelitis of a rib, perinephritic abscess, or neoplasms of the lung and mediastinum: or 5) a foreign body in the empyema cavity.

The management of a chronic empyema is at times a formidable undertaking, but the gratifying results of modern surgical treatment are striking. An extrapleural thoracoplasty may suffice in closing the cavity; however, a combination of this type of thoracoplasty, plus a Schede thoracoplasty, frequently supplemented by a muscleplasty, is called upon to close these massive chronic empyema cavities.

Bronchiectasis

In the past decade great strides have been made in the management of this chronic suppurative disease of the bronchi and lungs which manifests itself as a saccular or as a cylindrical bronchiectasis. This disease is a result of infection in the bronchial wall, and in childhood it frequently is a sequela of pneumonia, measles, whooping cough, influenza, scarlet fever and foreign bodies in the air passages. In the adult, pneumonia, influenza and lung abscess are the most common causes of bronchiectasis. There appears to be a definite relationship between chronic sinusitis and bronchiectasis.

Symptomatically the disease manifests itself by a chronic productive cough, loss of weight, secondary anemia and foul sputum. The patient will frequently give a history of recurrent attacks of pneumonitis, hemoptysis and an illness which dates the onset of the disease. Untreated, a high per-

centage of these patients will eventually die of pneumonia, pulmonary hemorrhage, or brain abscess. It is not uncommon to see an advanced case of bronchiectasis and have the patient deny the production of a foul sputum, but reveal recurring severe pulmonary hemorrhage. This type of case is classified as dry bronchiectasis.

The surgical treatment of bronchiectasis—a one- or two-stage lobectomy—utilizing the recent advances in anesthesia and a better understanding of the physiology of the chest, is well established. In a series of 84 cases Churchill of Boston has been able to report a mortality rate of less than 2 per cent. Alexander of Michigan, Overholt of Boston and many others report a mortality rate of less than 13 per cent. The mortality rate will parallel the severity of the disease in a given group of cases, and a higher mortality rate is expected in cases in which bilateral lobectomy is performed. In a majority of these cases, even with latent disease, an operation of this magnitude is tolerated surprisingly well.

The early cylindrical disease of the bronchi offers a problem; while dry or wet saccular disease, disease with recurrent attacks of pneumonitis or with hemorrhage, and disease with continued purulent sputum, the treatment is surgical. Instillation of iodized oil in early cases offers symptomatic relief by clearing up the infection, but if repeated attacks of infection occur with purulent sputum lobectomy at this stage of the disease is a far less serious procedure than in neglected cases. Bronchoscopic and postural drainage are of most importance in the preparation of the patient for a lobectomy and for a pneumonectomy, if the extent of the disease indicates the latter.

Lung Abscess

In spite of an improved technique in the surgical management and conservative or medical management of lung abscesses, the mortality rate from this disease remains high. In a series of cases reported by Rives and Romano[2], the known mortality rate was 42 per cent. Allen and Blackman's[3] collected statistics show a mortality of 34.3 per cent in 2,114 cases. This report comprises cases from the best medical centers and the situation is probably worse than these figures indicate.

Operations on the respiratory tract lead all other types of operations in the percentages of complications by a lung abscess. Pneumonia and influenza are causative diseases. Foreign bodies, tumors, traumatic injuries and septicemias are frequently exciting causes.

The management of a lung abscess is at times difficult. A fair percentage get well if left alone. A fair percentage will require meticulous medical attention, blood transfusions, supportive treatment and postural drainage to aid them to recovery. On the other hand in some of these cases surgery is urgently required. If the lung is extensively involved, the mortality will be high regardless of your selected therapy.

The primary causes of death are, in order of their importance: spreading pneumonitis, empyema, brain abscess and anemia. Transfusions will correct the anemia. Early surgical drainage of peripheral lung abscesses, operative drainage in two stages, omitting the unjustifiable use of pneumothorax in lung abscess, avoidance of prolonged conservative treatment when the patient is obviously at a standstill or growing worse and complete abandonment of needling the chest are some factors of importance in avoiding an empyema. Brain abscess may be avoided by opening the lung abscess with the actual cautery, operating with the patient in the Trendelenburg position, and by avoidance of unnecessary probing with a needle at the time of operation. The most important cause of death, spreading pneumonitis, can be prevented to a degree by supportive treatment and the judicious use of bronchial and external surgical drainage. Bronchoscopy has a place in the treatment of lung abscess, but in an acute lung abscess this procedure is contraindicated unless a foreign body is present. When the temperature subsides and the acute process stabilizes, bronchoscopy is indicated and it is indicated in the chronic lung abscess. Postural drainage deserves mention. It is useless to tip a patient over the edge of the bed in an attempt to drain an abscess cavity in the upper lobe or in the superior portion of the lower lobe. If an abscess cavity is full and postural drainage initiates severe paroxysms of coughing, you are courting the fatal complication, spreading pneumonitis. In elderly and debilitated individuals who are managing to raise their sputum satisfactorily, it is not uncommon to see postural drainage undertaken—and a fatal spreading pneumonitis result. Postural drainage has a place, but localize the cavity and individualize the case for best results. Surgical drainage of deep-seated cavities, surgical drainage of early acute lung abscesses, and prolonged conservative treatment when progressive improvement is not shown are other factors contributing to a spreading pneumonitis.

Cancer of the Lung

It is now generally accepted that the increase in incidence of cancer of the lung is not apparent but real. At the Cleveland City Hospital in the eleven-year period 1927-1937, there were 100 cases in which autopsy was performed, which constituted 1.3 per cent of 7,685 consecutive cases studied *post mortem* and 9.4 per cent of 1,064 cases of malignant tumor studied *post mortem*[4]. In other

words, one cancer patient out of every ten has cancer of the lung. This incidence alone signifies that cancer of the lung should be constantly considered in our problems of diagnosis..

In the past, most of the signs and symptoms ascribed to cancer of the lung have been due to carcinoma of the structures involved by regional and remote extensions of the growth from its site of origin. Cancer of the lung may be long silent, the first warning of its presence a supposedly primary brain tumor, which later proves to be a metastatic lesion from cancer of the lung. A serosanguinous pleural effusion, a Horner's syndrome, recurrent laryngeal nerve paralysis, or evidence of superior vena cava obstruction—any of these may be the first sign of a bronchogenic carcinoma. The manifestation of such regional and remote involvement in itself means that the condition has advanced beyond hope of a cure. The textbook picture of cancer of the lung—cough, pain in the chest, hemoptysis and loss of weight—frequently is shown; but here, again, most of these patients are beyond the scope of surgery. Any patient over 40 years of age with a lung abscess must be carefully investigated with reference to cancer of the lung. In a series of 100 cases of cancer of the lung reported by Koletsky 30 per cent had associated a lung abscess. In a series of 76 cases of lung abscess operated upon by Tudor Edwards, 10 per cent proved to have arisen from cancer of the lung. *If cancer of the lung is to be diagnosed early, it must be kept in mind.* It is often impossible to make a clinical diagnosis early; but chronic cough, hemoptysis, presence of a lung abscess, development of asthma in a patient over 40 years of age, shortness of breath and unexplained loss of weight should arouse suspicion of cancer of the lung. The presence of blood in the sputum was once pulmonary tuberculosis until proven otherwise, but now the burden of proof lies on the man who makes such a statement. Blood-spitting is frequently a manifestation of a lung tumor. If you are suspicious of cancer of the lung, a bronchoscopic examination will establish a diagnosis in 75 per cent of the cases. A routine x-ray examination of the chest will offer a clue. It may be necessary to do a diagnostic pneumothorax, but it will be possible in the majority of cases to establish a diagnosis. Recently, Barrett[5] published Dudgeon's results on the examination of the sputum for tumor cells. In 43 cases diagnosed as malignant tumor of the lung, fragments of new growth were found in the sputum *in every case.* In 19 cases of suspected malignant tumors, in which no fragments of new growth were found in the sputum, all were ultimately cleared of such suspicion. This method of approach offers great promise.

The successful surgical treatment of cancer of the lung by pneumonectomy does not differ from the treatment of cancer elsewhere in the body. The absence of one lung is not incompatible with a vigorous and active life. The remaining lung undergoes hypertrophy and the cardio-respiratory balance is soon restored to its preoperative state.

A one-stage operation, removing the entire lung and mediastinal glands after the method of Reinhoff[9], is the most popular technique of today in the good-risk patient. A two-stage procedure in which the pulmonary artery is ligated during the first stage with removal of the lung at the second stage is practiced in the poor-risk patients. X-ray therapy has not proven effective in the management of cancer of the lung; there is no case on record to my knowledge in which a cure has resulted. If a lung abscess develops secondary to a bronchogenic cancer and if surgical drainage of the abscess is established, x-ray therapy is certainly worth while as a palliative procedure.

Hypertension

The medical journals have for the past few years carried a great number of clinical and experimental reports on hypertension. Many of these reports deal with operations on the sympathetic nervous system for reducing a persistent elevation of blood pressure. A startling mutiplicity of theories as to the cause and nature of hypertension are discussed and for a review of this subject I would refer you to John Martin's article, "The Surgical Treatment of Hypertension[7]." Craig[6] of the Mayo Clinic reported a series of 158 cases with benefit in 70 per cent. His contraindications for operation were as follows: age of more than 50 years, congestive heart failure, angina pectoris, marked renal insufficiency and advanced arteriosclerosis. Peet[9, 10] was the first man in America to do a bilateral intrathoracic sympathectomy for hypertension and his series totals more than 400 cases. Some of his patients are showing a persistence of clinical cure, or great amelioration of symptoms for as long as 5 years. In 1935, he reported a series of 100 cases with the following results: 4 per cent operative mortality; 7 per cent showed no improvement; 16 per cent showed slight improvement, characterized by a slight fall in blood pressure with relief of symptoms; 33 per cent marked improvement with a marked fall in blood pressure and relief of symptoms; and 15 per cent were classified as tentatively cured. This gives worth-while improvement for 77 per cent of his patients. Craig's results are in keeping with Peet's.

Mediastinal Tumors

The mediastinum has long been looked upon as a cavity difficult of approach in that the posterior portion is situated deep between the pleural cavities and inclosed within a strong bony cage. These difficulties have been surmounted and there is little hesitancy in removing a tumor or cyst from any location in the mediastinum.

These tumors behave as new growths in any part of the body. If the tumor is benign, the growth is slow, usually symmetrical, well demarcated on the x-ray film, and the first symptoms are usually those resulting from compression. If the tumor is malignant, the growth is rapid, infiltrative, may or may not be well demarcated on the x-ray film, and it may manifest itself either by compression symptoms or by involvement of the contiguous structures. A pain in the chest which is persistent, localized and well defined bears investigation including an x-ray film of the chest. Mediastinal tumors are notorious for the paucity of physical findings in the chest examination.

Tumors of the mediastinum are as a rule not difficult to diagnose, if the location of the tumor is identified and kept in mind. Solid tumors are usually present in the posterior mediastinum, and they arise in the majority of instances from some nerve structure. We may have a simple neuroma, ganglioneuroma, perineural fibroblastomas, neurofibromatosis of the mediastinum, or any type of tumor that arises from the sympathetic or peripheral nervous system in any other location. Tumors arising from the sympathetic chain lie close in the costovertebral gutter. The solid tumors or cysts arising in the anterior mediastinum, especially when they are located above the hilus of the lung belong to the general class of teratomas or dermoids. A large group of tumors of the mediastinum are placed under a general classification of lymphoblastomas. The tumors frequently grow rapidly, lie in the posterior mediastinum close to the midline where the mediastinal lymphnodes are present, are frequently multiple, and respond like magic to radiation—but only temporarily.

It is impossible to discuss the surgical approach to these tumors. After the tumor has been localized, it is best to extirpate it, using the approach which least destroys the integrity of the thoracic cage. Each case will offer an individual problem. If the tumor is infiltrative and hopeless of cure attempt at surgical excision is not indicated. Dividing the sternum for relief of pressure symptoms may be indicated. If the tumor is confused with a lymphoblastoma, diagnostic radiation therapy may do good.

If the tumor, either benign or malignant, offers any chance of radical excision, an attempt should be made to remove it. The patients with a benign tumor will be cured; and so will those with a malignant lesion in sufficient number to amply warrant the attempt to cure all. Excluding lymphoblastoma, x-ray therapy does not offer benefit in any case of malignant tumor of the mediastinum.

The scope of my subject is too broad for a single article, and I am obliged to omit the ingenious procedures used for the removal of foreign bodies from the bronchi, lungs and esophagus; and, regretfully, I must also omit reference to the repair of diaphragmatic hernia, pulmonary neurectomy for asthma, surgery of the heart and great vessels, anastomosis of the pectoral muscle to the heart muscle in coronary ischemia, repair of diverticuli of the esophagus, and even some valuable collapse procedures in the management of tuberculosis.

Bibliography

1. Leslie, G. L. and Anderson, R. S.: Intensive Collapse Therapy in Pulmonary Tuberculosis. A study of the Extent and Results of such a Program in a Group of 1,124 Patients. *Am. J. Med. Sciences*, 183:735, 1938.
2. Rives, J. D., Major, R. C., Romano, S. A.: Lung Abscess. *Annals Surg.*, 107:753, 1938.
3. Allan, C. I., and Blackman, James F.: Treatment of Lung Abscess. *J. of Thor. Surg.* Vol. 6, No. 2, page 156, Dec., 1936.
4. Koletsky, S.: Primary Carcinoma of the Lung. *Archives of Internal Medicine*, Vol. 62, pp. 636:651, Oct. 1938.
5. Barrett, N. R.: Examination of the Sputum for Malignant Cells and Particles of New Growth. *J. Thor. Surg.*, Vol. 8, No. 2, Dec., 1938.
6. Rienhoff, W. F.: Carcinoma of Lung. *Surgery*, Vol. 1, No. 1, Page 125, Jan., 1937.
7. Martin, J.: The Surgical Treatment of Hypertension Collective Review. *International Abstract of Surg.* Vol. 67, 419:434, Nov., 1938.
8. Craig, W. McK.: Essential Hypertension. The Selection of Cases and Results Obtained by Subdiaphragmatic Extensive Sympathectomy. *Surgery*, Vol. 4, pp. 502:509, Oct., 1938.
9. Peet, M. M.: The Surgical Treatment of Hypertension. Proceedings of the *California Academy of Medicine*, 1935-1936.

Discussion

Dr. Emmett Madden, Columbia:

I have enjoyed Dr. Coleman's presentation very much. He is modest in his claims. Thoracic surgery is largely in its infancy. We have not heard anything about exploratory thoracotomy. In the treatment of tuberculosis we must stress the fact that any surgery should be considered only as it will increase rest to the diseased lung and to the individual as a whole. A field of great usefulness is in chronic bronchiectasis. People are dying from lung abscess whose lives could be saved by this measure. I think we are very fortunate in having Dr. Coleman connected with the Tuberculosis Sanatorium in Columbia, and are very grateful for the fact that his services are available to all of us.

Dr. William Atmar Smith, Charleston:

I want to commend Dr. Coleman for his comprehensive presentation of this interesting subject. He has man-

aged to cover a lot of ground in a short space of time.

It is in the field of thoracic surgery more, perhaps, than in any other that the close and sympathetic coöperation of the surgeon and the internist is essential for the best results. Especiallly is this true in the operative treatment of tuberculosis.

Dr. Coleman has pointed out that thoracoplasty should not be done until other simpler procedures have been considered. This is true for the most part, but there are certain instances where this operation only need be considered. A case of this type is illustrated by a case of my own in which there was an enormous cavity in the upper left lung. Artificial pneumothorax would be hazardous and a phrenic nerve operation would be like going after a buck with bird-shot. Thoracoplasty was done in this case, and the patient has entirely recovered and has been practicing her profession as a trained nurse for more than a year.

The use of intrapleural pneumolysis is a valuable adjunct to pneumothorax therapy. However, before it is attempted, the disease should be fairly well stabilized, for the procedure is by no means free of danger. This film shows an enormous pneumocele which developed as a result of this operation. The case was not well selected, and the procedure was used more with vague hope of benefit rather than from any assurance of a good result.

There is another procedure which has a limited field of usefulness in the cases in which pneumothorax and thoracoplasty are not indicated—that is pneumoperitoneum. The film which I herewith present is one in which pneumothorax could not be done, and the patient was too ill for thoracoplasty. Besides this, he was bleeding. This was not controlled by phrenic interruption. The introduction of air into the abdominal cavity brought about a 75% collapse of the lung, stopped the hemorrhage and permitted the healing of the cavity.

The kind of surgery Dr. Coleman is doing is a tremendously valuable addition to the armamentarium with which we are conquering tuberculosis; but surgical procedures are not indicated as a routine in pulmonary tuberculosis, as some of our lay writers would have their readers believe.

Dr. F. P. Coleman, closing:

I thank Dr. Madden and Dr. Smith for the discussion of my paper. Particularly do I want to thank Dr. Smith for his opinion on the selection of cases. Surgery dose not attempt to cure tuberculosis, but in certain cases, it can place the lung in position for cure. I believe lobectomy is becoming the choice of most thoracic surgeons in the treatment of giant cavities.

Edinburgh Medicine from 1860

(J. D. Comrie, Edinburgh, in *Edinburgh Med Jl.*, Sept.)

When Syme resigned the chair of clinical surgery in 1869, Lister, who had begun the study of antiseptics in Glasgow, returned to Edinburgh as Syme's successor, and continued his work on antiseptic surgery here. His work was done in the old Royal Infirmary for the present Infirmary had its foundation-stone laid only in 1870, and was not completed and open for patients until 29th October 1879. By this time Lister had gone to London, where he succeeded Sir William Fergusson as professor of clinical surgery in King's College in 1877.

Another to come to Edinburgh in 1869 was Sophia Jex Blake, one of the protagonists in the fight for the throwing open of the medical profession to women. Some of the professors were favourable, others were opposed. The dispute ended when the Universities (Scotland) Act of 1889 placed women on the same footing as men with regard to graduation in medicine.

In the chair of systematic surgery Professor James Miller was succeeded (1864) by James Spence, who had been a demonstrator under Monro and who wrote a textbook, *Lectures on Surgery*. On Spence's death in 1882 he was succeeded by John Chiene chiefly remembered nowadays for his fondness for aphorisms regarding surgical experience, the conduct of practice, the foibles of patients, and other matters which he believed to be of importance. Many of his old students still treasure such phrases as "A pimple on a man's nose is of more interest to *him* than a sarcoma in his neighbour's thigh;" "Surgery is nothing but applied anatomy and a little bacteriology." When he retired in 1909 he was succeeded by Henry Alexis Thomson, a person of decisive and epigrammatic style in lecturing. He was followed in the chair by D. P. D. Wilkie, whose recent death we deplore.

A distinguished surgeon of the Extra-Mural School was Sir Patrick Heron Watson (1832-1908), who had served in the Crimean War. He was a bold and brilliant operator, and also a physician whose advice was sought by persons from all parts of the country. A contemporary was Joseph Bell (1873-1911). As a surgeon to the Royal Infirmary he attracted large clinics and his skill in making diagnoses and unexpected deductions was commemorated by one of his students, Sir Arthur Conan Doyle, in the character of Sherlock Holmes.

John Duncan (1839-99) was another member of this group. His tall silk hat, long grey beard, and pair of high-stepping horses which he drove in a yellow dogcart made him for many years a well-known figure in the Edinburgh streets.

When Lister left Edinburgh the chair of clinical surgery was filled by the appointment of Thomas Annandale (1839-1908), of proverbial manipulative skill, charming personality and sympathetic nature. He was succeeded by Francis Mitchell Caird, in Edinburgh a pioneer in the performance of gastric and intestinal operations, in which he achieved great success.

In medicine Thomas Laycock (1812-76) had succeeded Alison in 1855. Laycock was succeeded by Sir Thomas Grainger Stewart, a contributor to both professional and dramatic literature, an entertaining lecturer, and a well-known consultant.

At the end of the 19th century the Extra-Mural School had a distinguished galaxy of teachers in medicine, of whom Sir Byrom Bramwell, G. A. Gibson, Alexander Bruce and Sir Robert W. Philip were the most noted. Philip graduated in the year in which Koch discovered the tubercle bacillus, and he established in 1887 the Victoria Dispensary for diseases of the chest, with the object of discovering and treating the malady at an early stage in other members of the family of affected persons.

The Edinburgh physician whose name is associated more than that of any other with advancement of the knowledge of diseases affecting children was Dr. John Thomson (1856-1926).

In midwifery Sir J. Y. Simpson, who had made Edinburgh famous as a school of obstetrics and gynecology, was succeeded by his nephew Sir Alexander Simpson (1835-1916) in 1870, and he held the chair till he retired in 1905. John William Ballantyne (1861-1923) was celebrated for his work on diseases of the fetus, and also for his insistence upon the importance of ante-natal control of pregnant women. *He was the first person in Great Britain to establish a clinic for ante-natal supervision.* Robert Milne Murray (1855-1904), although an obstetrician, was the first medical electrician to the Royal Infirmary before the days of x-rays.

In the subject of anatomy Sir William Turner succeeded

(*Concluded on P.* 481)

The Management of a Blood Bank

Twelve months' experience—two-thousand transfusions at Gallinger Municipal Hospital

CHARLES S. WHITE, M. D., F. A. C. S., and JACOB J. WEINSTEIN, M. D., Washington

SINCE blood transfusions have been accorded approval by the profession as an efficient therapeutic proceeding, the general application of this form of treatment has been broadened to such an extent that there is apprehension lest it be overdone. It has followed the rule of newer methods, in that the pendulum swings a little too violently after a struggle to start, and then settles down to a steady routine. We shall not enter into a discussion of the indications or contraindications for its use, but will venture the statement that transfusions are here to stay during the professional lifetime of most of us. The demand for blood has been so great that the supply, while sufficient, has become too expensive for many patients. It is chiefly for the ward or charity patient that a blood bank is established.

The expression "blood bank" is especially appropriate. The system of storing and dispensing blood is controlled by bookkeeping somewhat as a bank is conducted. The blood is deposited, placed in safekeeping, receipted for and checked out only on requisition; it is charged to the department in the hospital which receives it. A good blood bank should never be insolvent or closed, and only the careful supervision of its directorate will keep it solvent and open.

During the past two years much has been written on the use of stored blood. It is our purpose in this article to relate our experience in the establishment, organization, and maintenance of a blood bank at Gallinger Municipal Hospital.

Blood is obtained from the relatives and friends of the patients who need transfusions. The essence of any system of obtaining donors is one in which there is direct contact with the donors. Our present method of contacting donors is through the patient and the Police Department. When the donor reports at the hospital on the designated day, the blood bank system is first explained and blood is drawn from only those who fulfil the following requirements:

1) Between ages of 21 and 50
2) In good health
3) History negative for syphilis, with or without treatment
4) History negative for chronic alcoholism
5) History not suggestive of recent illness, mild or severe.

The donor who meets these requirements must then sign a paper releasing the hospital from all liability and giving permission to use the blood as the hospital authorities may elect. This is the form we employ:

BLOOD TRANSFUSION PERMIT

I, the undersigned, willingly give my blood to be used for transfusion at Gallinger Municipal Hospital. The use of this blood to patients shall be determined by the Hospital Staff, and I release them from any liabilities or claims.

Witness .....

Date .....

There are certain rules essential to the donor clinic:

1) Those in charge must be well trained and well supervised.
2) Simple and uniform technique must be used.
3) Unusual care must be taken in the technique to preserve a sterile product.
4) Discomfort to the donor must be reduced to a minimum.
5) Adequate room must be provided, and unnecessary delay avoided.

Blood is drawn from all donors without preliminary typing or testing. This is deposited and credited to the patient in whose favor it was given. Each patient who needs a transfusion has an account and he can receive blood until his account is exhausted. All in excess of his needs is available for some patient who may lack a donor. The drawing of blood from all donors prevents the search for the specific type required by the patient and this removes the necessity of taking a large amount from any one person; all samples are tested by culture, Wassermann and gross sedimentation before using.

The storage of blood in the refrigerator is the next phase in blood banking. This is carried out immediately after phlebotomy as undue exposure to room temperature and unnecessary handling produces early and rapid hemolysis. The refrigerator is probably the most important item of equipment; it should have automatic thermal control

to maintain a temperature of 38° F. and space enough to hold conveniently at least forty bottles or flasks of blood. Ample space for refrigeration must be emphasized. The blood is checked daily by the banker for the degree of hemolysis.

The care of the equipment in blood banking is a routine which must be carefully supervised. We shall not describe our technique. The principle is complete dissembling after using, thorough cleaning with tap and distilled water, avoiding long contact of tap water with the equipment, the treatment of all new rubber equipment with sodium hydroxide solution, and finally sterilization under 20 pounds pressure for 20 minutes. Pure transparent gum-rubber tubing must be used.

Blood is dispensed only during the regular banking hours, except for emergency transfusions. The intern requests the laboratory to determine the type of the patient and sends a requisition and sample of patient's blood to the bank where crossmatching is done. He is furnished the desired amount of blood and then proceeds immediately with the transfusion, the work being done at the bedside by the simple indirect method.

To maintain efficiency and to avoid reactions, the following rules are observed:

1) Transfuse immediately
2) Handle the blood no more than is necessary
3) Warm gently and evenly to 98° F.
4) Give all transfusions slowly—approximate rate: 30 minutes for 500 c. c.
5) Intern remains with transfusion for the first 30 minutes.
6) All reactions, immediate or delayed, reported promptly to the resident on the service and to the banker.
7) All reports of transfusions completed and returned to bank or supervisor of bank 12 hours after the treatment.

The relationship of the laboratory to the blood bank is an important one, as no blood bank can function satisfactorily without the wholehearted coöperation of well trained technicians who carry out the typing, crossmatching, serologic tests and cultures—all this work being done by the same staff of technicians in order to reduce errors to a minimum.

Blood bank records should be simple yet adequate for the repeat checkings that are necessary in transmitting blood from donor to bank, and from bank to patient. The records should contain description of patient, the indications, amount and type of blood desired, the donor, the results of the transfusion with particular attention to any complications which may have occurred. All records should be permanent and accessible to the resident staff and for research work. A weekly summary of the bank's activities is issued and distributed throughout our hospital to stimulate interest.

Summarizing the essential factors in order to maintain a blood bank system that performs satisfactorily, the following recommendations are made:

1) Three transfusions, at least, daily, as the minimum requirement.
2) A supply of at least 15 flasks of blood must be maintained in order to have on hand all types in normal proportions.
3) One individual, preferably a physician well versed in transfusions, should be directly responsible for the operation of the bank.
4) A group of doctors and nurses who are trained as a team to assume entire charge drawing and transfusing blood.
5) Adequate laboratory facilities and competent technicians.
6) Ample quarters for the professional set-up and such accommodations for the donors as will prevent crowding and delay.
7) Sincere and continuous coöperation of all departments with the bank.
8) Adequate equipment and care of this equipment.

The impression should not get abroad that preserved blood has completely replaced whole fresh blood for transfusin purposes. The bank itself has some inherent weaknesses. The availability of banked blood will no doubt increase the number of transfusions and decrease the careful and judicious use of blood. Physiologically and according to clinical experience, preserved citrated blood is apparently satisfactory for the restoration of blood volume in the treatment of severe traumatic hemorrhage and shock.

Probably we should first call attention to the fact that blood over three weeks in storage is rarely free from danger and lacks many desirable qualities of fresh blood. After five days, there are many changes in the blood which render it almost useless in diseases in which it is frequently used. From an unfinished study of stored blood, we can state that there is a somewhat constant change in the cellular elements, the very nature of which deprives it of some of its therapeutic qualities. We are cognizant also of chemical changes, particularly in reference to prothrombin substances and sugar content, that should make us select our cases for transfusion from bank blood with certain reservations.

We feel that the case of stored blood is on trial and in the course of the next year or two, considerable information will be set before us which

may alter materially our present conception of the indications for transfusion. We do not believe that the practice will be abandoned or greatly restricted, but that it will be possible to lay down clean-cut indications, and that blood plasma as a curative or prophylactic agent may play an important part.

References

FANTUS, B.: *Jour. A.M.A. 109*, 128, 1937.

BATES, R. R.: *S. G. & O. 65*, 545-49, 1937.

CAMERON, C. S., FERGUSON, L. K.: *Surgery* vol. 5 No. 2, 237, 1939.

History of Pathology

(T. S. Tirumurthy, Madras, in *Indian Med. Rec.*, May)

(*Continued from September issue*)

Antonio Beniviene (1440-1502) is the Father of Pathological Anatomy. Alesandro Benedetti (1460-1525) built the Anatomy Theatre at Padua, centre of learning for such illustrious medical men as Vesalius, Columbus, Fabricius, Harvey and Morgagni.

The 16th century laid the foundation of the science of anatomy. Those were the days of 'universalism' and not 'specialisation.' The same men contributed to medicine, surgery, obstetrics, pathology, etc.

Jean Fernel (1497-1558) published in 1554 his *Universa Medicina*. He subscribed to the theory of the four humors and to the implications of that theory.

Steven Blankaart's (1650-1702) *Anatomia Practica* was a record of 200 autopsies.

Giovanni Battista Morgagni (1682-1771) is one of the greatest figures in the whole history of pathology. He collected a vast amount of pathological material, which he always closely correlated with clinical findings and arranged and analysed it in a systematic manner. He taught at Padua, which was the Mecca for medical men in those days.

John Hunter (1728-93) collected 13,000 specimens, which are now placed in the Hunterian Museum of the College of Physicians and Surgeons, London.

Marie-Francois Xavier Bichat (1771-1802) gave a new concept to morbid anatomy by his presentation of the various tissues as units. His tissue concept ranks only second to that of the cellular concept of Virchow.

Rene Theophile Hyacinthe Laennec (1781-1826) was the discoverer of mediate auscultation; the founder of the art of physical diagnosis.

P. A. C. Louis (1787-1872) made careful studies in the wards and mortuaries of the great Paris hospitals. He was a master of objective observation and statistical analysis.

Richard Bright (1789-1858) was among the pioneers with autopsy findings.

Carl Rokitansky (1804-78) and his successors, Skoda and Hebra, made Vienna a great centre for medicine; in his 50 years, he is said to have performed over 30,000 autopsies.

Hans Chiar (1851-1916) made Prague the leading centre for the study of pathology.

Theodore Schwan (1810-82) established the doctrine of the cell structure of animal tissue.

Rudolph Ludwig Karl Virchow (1821-1905) emphasized the proper understanding of pathological physiology and the relation of pathology to clinical medicine; established the doctrine of the continuity of cell life by his well-known axiom, *omnis cellula a cellula*. He did not accept the migration of leucocytes from capillaries in inflammation. He denied Darwin's theory of evolution and was impervious to the discoveries in bacteriology and immunology.

Carl Weigert (1845-1904), a student of both Virchow and Cohnheim, discovered the differential stains which enlarged our knowledge of normal and pathologic histology; and that destroyed parenchyma was replaced by an overgrowth of connective tissue.

Francois Magendie (1783-1855) of the French School proved that disease processes as well as normal function could be subjected to experimental investigation. His famous pupil, Claude Bernard (1813-78) inaugurated a new era in pathology by establishing by systematic experiments that disease phenomena could be produced in the living.

Julius Cohnheim (1839-84) was the greatest experimental pathologist of the last century. He was the most distinguished pupil of Virchow. Cohnheim emphasized the need for the functional and experimental study of disease and made many important contributions to pathology.

William H. Welch (1850-1934) was a pupil of Cohnheim. The present-day prominence of American medicine and Johns Hopkins Medical School and Hospital is due to Welch.

In 1921, Banting and Best isolated insulin from the pancreas.

In olden times nature of epidemic diseases was obscure and mysterious. The first person to lift this veil of mystery was Louis Pasteur. He stated that if the processes of change and decay are indeed processes of life, there must exist in nature innumerable tribes of living things. He gave the quietus to the doctrine of spontaneous generation. Pasteur should, therefore, be considered as not only the father of bacteriology but also of preventive medicine.

Edward Jenner had discovered the effect of vaccination as protection against the attack of smallpox. These wonderful discoveries of Pasteur and Jenner formed the basis of all subsequent development in preventive medicine.

(*To be continued*)

Edinburgh Medicine

(*From P. 478*)

Goodsir in 1865. He was for many years the most prominent figure in Edinburgh University. He was succeeded in 1903 by David John Cunningham, whose textbook on anatomy is still in constant use.

In physiology Hughes Bennett was succeeded by William Rutherford (1839-99) in 1874. Rutherford's personality and peculiarities provided Conan Doyle, who had been a student under him, with the basis for his well-known character, Professor Challenger. He was succeeded in 1899 by Edward Albert Schafer, later known as Sir Edward Sharpey Schafer, under whom the Edinburgh school of physiology developed enormously on its research and scientific side.

In materia medica Sir Robert Christison was succeeded in 1877 by Sir Thomas R. Fraser (1841-1920), whose name is associated with his work on strophanthus and other arrow poisons, antivenin and work done in connection with Alexander Crum Brown.

About 1880 the University introduced the principle of appointing lecturers in subjects which did not appear to require the prolonged instruction of a professor, or for which professorial endowment was not available. The first of these was Sir Thomas Smith Clouston, lecturer on mental diseases, appointed in 1879, and the second Douglas Argyll Robertson, lecturer on diseases of the eye, appointed in 1883.

TUBERCULOSIS of a genito-urinary organ should be thought of as a systemic disease.

The Crowell Clinic's Experience with Ureteral Stone

Claude B. Squires, M. D., Charlotte, North Carolina
From the Crowell Clinic of Urology

EIGHTEEN years ago (1921) Dr. A. J. Crowell reported to the Montreal meeting of the American Urological Association on 98 cases of ureteral stone treated in the Crowell Clinic in the preceeding 6-year period. In all but three of these cases, removal of the stone or stones by cystoscopic manipulation was judged to be the most promising mode of management; and in 88 cases—all but seven of those in which this method was undertaken—success rewarded the effort. In four cases the stone was accidentally returned to the kidney pelvis by the manipulations; in one relief was afforded by ureteral dilatation and the patient did not return; and in the remaining two (of the seven cases) ureterolithotomy was required. Of the three cases found unsuitable for cystoscopic manipulation, two required nephrectomy, and in the third the ureteral stone was removed in the course of an open operation for removal of a large stone from the pelvis of the kidney of the same side.

The feature of the technique of the procedure which Dr. Crowell emphasized was dilatation of the ureter by the insertion at proper intervals of catheters in increasing number, and allowing these catheters to remain in situ for considerable periods.

The lengthy and favorable discussion of this report was participated in by Drs. Braasch, Livermore, McClure Young, Bransford Lewis and a number of others. The remarks of Drs. Livermore and Lewis are cited particularly because Dr. Livermore called attention to the fact that Dr. Lewis was the first man to start him (Dr. Livermore) on this line of work, and went on to say that Dr. Crowell had opened their eyes to the possibilities of what could be done: and Dr. Lewis looked on Dr. Crowell's plan as a distinct addition to the method already in use and heartily commended it.

Four years later (1925) Dr. Crowell reported to the Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia on a series of 298 cases of ureteral stone.

As an introduction to this second report, he quoted the conclusions at which he had arrived as a result of experience with the smaller group, and said these conclusions were still valid.

The original technique he would modify only to the extent of being more careful to anesthetize thoroughly the ureter, and to leave the catheter in the ureter for one to three days.

Of the 298 cases treated between 1915 and 1925, not one terminated in death. Ureteral stone impaction necessitated nephrectomy in four cases, ureterolithotomy in nine and pyelotomy in eight.

Of the 200 cases seen between 1921 and 1925, the left ureter was the seat of stone in 123 cases, the right in 71 cases, and in six cases both ureters contained stones.

The average time under care before the patient was rid of his stone or stones was 16½ days. Many of the patients, including a few physicians, were about their daily work most of the time while undergoing this treatment.

In 1928 I reported to the Annual Meeting of the Medical Society of the State of North Carolina on the 208 cases of ureteral stone coming into the Crowell Clinic, February, 1925-March, 1928. Of this series of cases, in 106 the left ureter was involved, in 100 the right, while in two instances both ureters carried stones. By operative cystoscopy 161 of these patients were freed of stones. Of the 19 open operations required, 17 were uretero-lithotomies—16 abdominal and one vaginal, one a pyelotomy for removal of a high-up stone, and one nephrectomy of a kidney whose functional ability had been totally destroyed.

Of the 19 patients from whom stones are not known to have been removed, a few did not accept treatment and many left before completion of treatment, and it is to be supposed that a good number of these passed their stones.

Of the 161 known to have been relieved of their stones by cystoscopy, 82 were free of stones in the first week of treatment, 35 in the second week, 16 in the third and nine in the fourth week. Thus four weeks from the beginning of treatment 88 per cent of the recoveries had been effected. Within the year an additional 3.7 per cent was added to the list of recoveries, and one got rid of his stone in the second year. At this time a special stone dislodger had been added to the equipment and found useful in certain cases.

A further report of 100 additional cases brought our records on the management of cases of ureteral stone up to March 31st, 1930. In this group of 100 cases: stones were recovered in 94—in 90 by cystoscopic manipulation, in 4 by open operation; in three cases open operation was advised but not accepted, and in the remaining three cases manipulation did not recover the stones. In the manage-

ment of the cases of this series the only change made in technique was reduction in the time the catheter was left in the ureter.

Herewith report is made on the 339 additional cases coming under our Clinic's care from April 1st, 1930, to February 28th, 1939. The stones were removed by manipulation in 217 cases of this series, by open operation in 70; in 54 cases the patients failed to present themselves for completion of treatment; in 36 cases stone was not recovered, and in four cases the patients are still under treatment. The right ureter was the seat of stone in 173 cases, the left in 162, both in three. Males preponderated in the ratio of 252 to 86; and all but three of the patients were white.

The small number of Negro patients brings to mind the opinions expressed by Higgins and others that vitamin-A deficiency is an important causative factor in urinary lithiasis.

Higgins had noteworthy success in producing urinary stones in white rats by maintaining them for long periods on a dietary deficient in vitamin-A, and in causing the stones to disappear by feeding the rats on a dietary rich in this vitamin. These experiences led him to prescribe foods rich in vitamin-A for human patients with stones which were not demanding immediate removal. At that time Higgins was able to report having had 18 cases of stone in the kidney in which all stones entirely disappeared under this management. Two years later (1937) the same author reported his conclusions from a larger experience. These conclusions state very definitely that the pH of the urine from the kidney harboring the stone must be known so that the high vitamin-A dietary may be made acid or alkaline-ash as indicated; that 32 patients with stones too large to pass spontaneously have responded favorably to this dietary management; that 79 patients who passed stones at frequent intervals have been relieved of symptoms over a period of two years, and that recurrence of stone has been reduced from 16.4 to 4.7 per cent. In a still later article (1938) he quotes a number of clinicians as having observed that urinary lithiasis is a disease of the poor, whose diet is likely to be dificient in vitamin-A. A South African, Vermootten, is quoted as saying, after a study of the records of more than a million Negro patients, that renal calculi do not form in the South African Negro; while the white population of South Africa are so afflicted in the ratio of one in each 460 admissions. The further observation is made that Negroes there live on a diet rich in vitamin-A, poor in calcium and having an acid-ash base.

Keyser, who has done much experimental work in investigating the formation of urinary stones, in discussing a series of papers at last year's meeting of the American Urological Association, had this to say: "In experimental lithiasis produced by. . . . vitamin starvation or by infection, the stones produced are preponderatingly vesical" . . . Speaking of the stone problem in general . . . . . "methods of dissolution relying on changing the urinary reaction, or the administration of vitamins and drugs, have proved, with occasional exceptions in case of softer, recently formed calcareous masses, preeminently disappointing."

Our experience offers no evidence that dietary deficiency has anything to do with causing urinary stone formation. The great majority of our patients were in the comfortably-off group and there is every reason to believe that they were entirely adequately nourished. The small number of Negroes in the series argues against the deficiency idea, for, certainly in this country, inadequate nutrition is far more prevalent among the Negroes than among the whites.

Of the 26 open operations, seven were nephrectomies, 18 were ureterolithotomies and the remaining one a pyelotomy.

(Turn the page)

	Reported 1925	*Reported 1928*	*Reported 1930*	*Present 4/1/30 Report to 2/28/39*	*Totals*	*%*
Total number of cases	298	208	100	338	944	100.00
Recovered by cystoscopic manipulation	277	161	90	217	745	78.90
Recovered by open operation	21	19	4	26	70	7.42
Advised open operation but did not return		9	3	1	13	1.38
Not recovered by cystoscopic manipulation—did not return for further treatment		19	3	54	76	8.06
Stone not recovered				36	36	3.82
Still under treatment				4	4	.42

The number of cases of stone in different situations, and results obtained in certain groupings were as follows:

Situation	*Number Cases*	*Treatment and Results*
Right ureter	5	In all cases removal by cystoscopic manipulation
Left ureter	4	In 3 cases removal by cystoscopic manipulation; one case of one stone; still under treatment
Both ureters	3	1 case removal by cystoscopic manipulation; 1 case removal by cystoscopic manipulation of stone in right ureter, that in left by ureterolithotomy. 1 case stone in right ureter removed by cystoscopic manipulation; did not return for removal of stone in left ureter.

Associated pathological conditions gave the following groupings:

	Cases
Left ureteral stone—left renal stone	2
Left ureteral stone—right renal stone	10
Right ureteral stone—right renal stone	2
Right ureteral stone—left renal stone	5
Right ureteral stone—bilateral renal stone	2
Left ureteral stone—bilateral renal stone	1
Left ureteral stone—left renal stones	1

Individual notes on complicated cases:

Cases of left ureteral and of left renal stone: patient under treatment, called home on account of death in family, did not return.

Case of left ureteral and right renal stone: ureteral stone was removed by cystoscopic manipulation; right kidney removed later.

Case of right ureteral and of right renal stone: nephrectomy on account of destruction of kidney.

Case of right ureteral and of left renal stone: patient did not return for treatment.

Case of right ureteral and of bilateral renal stone: ureteral stone was removed by cystoscopic manipulation, then each kidney was operated on at intervals for removal of stones.

Case of left ureteral and of right renal stone: patient did nor return for treatment.

Case of right ureteral and of left renal stone: ureteral stone was removed by cystoscopic manipulation; because of destruction of left kidney, nephrectomy was done.

Case of left ureteral and of right renal stone: operation advised for removal of stone in left ureter; patient did not return.

Case of left ureteral and of right renal stone: ureteral stone removed by cystoscopic manipulation; nothing done about the renal stone.

Case of right ureteral and bilateral renal stone: patient did not return following examination.

Case of right ureteral and of bilateral renal stone: ureteral stone removed by cystoscopic manipulation; patient did not return for further treatment in regard to renal stones.

Case of left ureteral and of right renal stone: ureteral stone removed by cystoscopic manipulation; did not return for treatment of renal stone.

Case of left ureteral and of right renal stone: ureteral calculus removed by cystoscopic manipulation; due to destruction of right kidney by stone, nephrectomy was done.

Case of left ureteral and of right renal stone: patient did not return for treatment.

Case of right ureteral and of left renal stone: ureteral stone removed by cystoscopic manipulation; did not return for treatment in regard to disease condition of left kidney.

Case of left ureteral and of left renal stone: due to destruction of kidney, nephrectomy was done.

Case of right ureteral and of left renal stone: patient did not return for treatment.

Case of left ureteral and of bilateral renal stone: ureteral calculus removed by ureterolithotomy; patient returns at regular intervals for roentgenographic check-up of renal stones.

Case of right ureteral and of left renal stone: ureteral stone removed by cystoscopic manipulation; has not returned for treatment in regard to left kidney.

Case of left ureteral and of right renal stone: ureteral stone removed by cystoscopic manipulation; patient has not returned for attention to renal stone.

Case of left ureteral and of right renal stone: ureteral stone removed by cystoscopic manipulation; patient has not returned for attention to renal stone.

Case of left ureteral and of right renal stone: patient did not return following examination and treatment.

Case of left ureteral and of right renal stone: patient did not return for further treatment.

Conclusion

We herewith bring up to the present what appears to be an unusual experience in a large series of cases of ureteral stone.

Further experience has borne out the impression gained from the first series—that by persistence in gentle maneuvers, under local anesthesia, the urologist may remove the vast majority of ureteral stones, if not always swiftly (*cito*), certainly safely (*tuto*) and fairly pleasantly (*jucunde*).

References

Crowell, A. J.: The removal of ureteral stones by cystoscopic Manipulation. *Jr Urol.* 6:243-255. 1921.

Idem: A further study of the removal of ureteral stone by cystoscopic manipulation. *So. Med & Surg.* 87: 238-240.

Squires, C. B.: Ureteral stones (Methods of removal). *Trans. Med. Soc. State of N. C.*, 1928, 476-481.

Idem: Disposition of Ureteral Calculi at The Crowell Clinic from 1915 to March 31st. 1930. *Jr. Urol.* 24:461-462.

Higgins, C. C.: The Medical Management of Urinary Lithiasis. *Surg. Clin. N. A.*, 15:923-936, 1935.

Idem: Treatment of Urinary Calculi. *British Jr. Urol.* 9:36-46, 1937.

Idem: The Dietary Regimen in the Treatment of Renal calculi. *Jr.-Lancet*, 58:391-393, 1938.

Keyser, L. D.: Discussion. *Jr. Urol.* 41:391-393, 1939.

Appendicitis in Children

(W. H. Thompson, Minneapolis, in *Jl. Tenn. State Med. Asso.*, July)

Since 1935 we have conducted a study at the University of Minnesota Hospital of appendicitis in children, in which all of those patients with extension of inflammation beyond the appendix were treated during the acute stage *by means other than surgical intervention*. Which of the patients with acute appendicitis had extension beyond the appendix? The coöperation of the surgical and pediatric staffs has evolved the following criteria: 1) tenderness, spasm, rigidity and rebound tenderness on both sides of the abdomen; 2) a rectal t. of 102 or above and a pulse of 120 or above; 3) a large mass usually in the right lower quadrant, or in the pelvis. This latter evidence of extra-appendiceal extension occurred when patients had been ill for an average of 6.3 days, compared with 3 days for the group with generalized findings.

There have been 241 children with appendicitis in the hospital during this 3-year period; of these 131 had the signs of unruptured appendicitis and were operated on immediately, with but one death. Of the 110 who had signs of extra-appendiceal extension, 67 had signs of generalized involvement and 43 (those of longer duration) had localized their infection when first seen. Large palpable masses on admission in 32 and in the remainder sufficient rigidity of the abdominal muscles to obscure an underlying mass, but the extent of the rigidity and high fever and pulse indicated that the infection had spread beyond the appendix, but did not involve the entire peritoneal cavity.

Excluding the well-localized infections, the great majority were acutely ill with fever of 102 to 105°, gray pinched facies, severe pain and distention of the abdomen, and with vomiting a distressing feature.

Probably the chief factor in bringing about recovery of these patients is the nearly complete removal of fluid and gas from the distended paralytic or obstructed matted bowel loops. This relieves the pain, stops the vomiting promptly, reduces the toxemia and puts the inflamed bowel at rest so that activity no longer interferes with the walling-off and healing process. In our experience success depends largely upon the skillful use of the continuous gastroduodenal siphonage devised and instituted by Dr. Owen H. Wangensteen.

In the group of 110 cases there were 5 deaths, a mortality of 4.5%. These deaths occurred early in the stage of generalized, profusely purulent peritonitis, and were frequently complicated by bronchopneumonia. Most of these patients were moribund on admission and failed to respond to supportive treatment. In one, recovery was taking place, as indicated by a declining fever, until too-vigorous palpation of his abscess caused rupture with quickly fatal results. This illustrates the need for gentleness in palpation of these abdominal masses.

The Treatment of Skin Infections

(R. G. Cushing, Detroit, in *Mich. Valley Med. J.*, Sept.)

Remedies capable of killing bacteria outside the body may also destroy body tissues and the resulting dermatitis frequently is worse than the initial infection.

Investigation led me to use hexylresorcinol solution S. T. 37 upon my cases of ringworm infection of the feet. It proved to be non-toxic, non-irritating, odorless and stainless, and very effective.

As a wet dressing it relieves irritation and has a local analgesic effect.

Abdominal Tumors in Children*

A Report of 75 Cases

Louis Platt, M. D., Buffalo, New York

OF ALL the children admitted to Duke Hospital 2.1% had abdominal tumors or enlargement (table 1).

Wilm's tumor, embryosarcoma of the kidney.—This is by far the most common type of abdominal tumor in children[1]: 24 cases are included. The age range was between 8 months and 9 years, with an average age of 3½ years. Ten were boys and 9 were colored. Fifteen complained of pain in the abdomen or flank, but severe pain was not common and in many the tumors were discovered accidentally by the parent. Twelve children had hematuria at some time in their course and half of these had gross hematuria. The non-protein nitrogen of the blood was not elevated in the 13 patients in which the determination was performed. Most of these patients had some degree of hypertension[2] as has previously been reported. Flat films of the abdomen usually show a dense soft-tissue shadow without calcification. In 19 cases intravenous pyelograms were obtained. Only 3 appeared normal. The others showed a non-functioning kidney or a distorted renal pelvis on the affected side. Metastases usually occurred late and were found in the lungs in 5 cases, and twice in the liver and bones. The incidence of metastases was undoubtedly much higher, but many of these children died at home and were not autopsied.

Diagnosis is based on the presence of a rapidly growing, often painless, frequently accidently discovered, unilateral abdominal tumor in a young child. Hypertension and the demonstration by intravenous pyelography of an abnormal renal pelvis are confirmatory. Irradiation is a valuable diagnostic as well as therapeutic agent. Practically every Wilm's tumor will rapidly, although only temporarily, decrease markedly in size following the use of irradiation therapy. Few abdominal tumors of childhood are so radiosensitive. The diagnosis in most of these tumors was confirmed by histological study.

Treatment consisted of irradiation followed by excision of the tumor, provided physical examination and x-ray studies revealed no metastases.

Of these 24 children, 3 have been followed for less than 18 months, 19 are dead and 2 have survived 4 years or longer. These 2 patients are without evidence of recurrences at the present time. It is interesting to note that neither of these children has ever had an elevated blood pressure[3].

Neuroblastoma.—Included in this series are 6 cases of neuroblastoma of the adrenal gland in children from 13 months to 6 years of age, the average age being 3 years. Three were boys and one was colored. In 2 patients the initial symptom was abdominal swelling. One other complained of pain in the back and abdomen, another of pain in the back and leg. The fifth child complained of abdominal pain followed by the appearance of enlarged cervical glands and the sixth developed enlarged cervical glands followed by swelling about one eye, exophthalmos and nodules on the scalp. At the time of admission all 6 had a palpable abdominal tumor. Four were markedly malnourished and wasted, although the average duration since the onset of symptoms was only 4½ months. Two had tenderness over the thighs. In 2 the liver was enlarged and in 2 others it was impossible to determine the size of the liver because of a mass in the right upper quadrant. Two had ecchymoses, one with bilateral exophthalmos, and 2 had enlarged cervical glands. One was icteric and had moderate pitting edema of both lower extremities. One developed a metastatic lesion in the jaw while in the hospital, and another developed flaccid paralysis of the lower extremities and a cord bladder. The blood pressure was elevated in one patient (125/80). The hemoglobin ranged from 22 to 70% (Sahli) with an average of 50%. In only one case were the white blood cells increased. The non-protein nitrogen was normal in the 3 cases in which it was determined. The child with edema and jaundice had a direct van den Bergh, with a bilirubin of 8.0 and total serum proteins of 3.8 mg.%, with an A/G ratio of 1.1. Flat plates of the abdomen were obtained in 4 cases. One was negative and the other showed soft-tissue masses. Two of the latter showed irregular flecks of calcification[4]. Skull plates were negative in 3 instances, although in one the autopsy revealed extensive metastases. In another, in which exophthalmos had developed, there was separation of the suture lines but no evidence of bony destruction. Two of the 4 chest films were negative. One showed fluid at both bases and in another there was a rounded mass projecting out from either side of the dorsal spine just above the diaphragm. Films of the spine were negative in 2 other cases. In

*From the Department of Pediatrics, Duke University School of Medicine and Duke Hospital, Durham, N. C.

2 of the 4 cases there were areas suggestive of metastases to the bony pelvis. The long bones were negative in 4 cases; a fifth showed evidences of metastases. Two intravenous pyelograms were done. One was normal and the other showed a distorted renal pelvis on the affected side. In one case films of the jaw were negative, but 9 days later a soft-tissue mass had appeared.

At autopsy, the child with the exophthalmos and ecchymoses showed metastases to the scalp, skull, meninges, liver and distant lymph-nodes. The child with the ascites, icterus and ecchymoses had a large abdominal tumor which compressed the liver and the blood-vessels. There was metastasis to the skull. The child with the spastic paraplegia showed metastases in the spinal cord, vertebral column, sternum, liver and kidneys. All three had large abdominal tumors arising from and replacing one or both adrenal glands, and metastases in the regional lymph-nodes.

The diagnosis is often difficult since the clinical picture is dominated to a large extent by the metastases which tend to occur early and may even be present in the absence of a palpable abdominal tumor. Metastases occur most commonly to the lymph-nodes, both regional and distant, to the liver, to the skull and to the long bones. Clinically, the metastases are manifested by enlargement of the liver and superficial lymph-nodes, by ecchymoses, by exophthalmos and by metastatic nodules on the scalp or other parts of the skull. Roentgenologically the metastases are manifested in the skull by tiny punched-out areas and separation of the suture lines, and in the long bones by destructive areas and periosteal elevation. Several cases showed negative x-ray findings although metastases had occurred. This was probably due to the fact that the films were taken too early. Very often these children complain of pain in the back, abdomen and lower extremities. This is due either to pressure on the nerves emerging from the lumbar spine or to metastasis to the affected bones. Two cases were diagnosed at autopsy. In another, autopsy confirmed a presumptive diagnosis based on histological study of a nodule removed from the scalp. The other 3 were diagnosed on biopsies of the original abdominal tumor, of a cervical lymph-node and of a metastatic tumor in the jaw, respectively.

Treatment usually is palliative since almost always metastasis has occurred before the diagnosis is made. Irradiation gave some temporary improvement in only 1 of the 5 cases in which it was used. In view of the rapid course of the disease it is questionable whether any form of therapy is indicated once metastasis has occurred. Theoretically, permanent cure should follow early surgical extirpation but such a cure has been reported only once[5].

In 5 cases in which exact date of death is known the time of survival from the appearance of the first symptoms was from 3 to 12 months with an average of 5 months.

Cirrhosis of the liver.—Five cases were seen. The age range was from 4 months to 13 years. One was a girl. In 2 infants, each aged 4 months, jaundice had persisted since birth, and in one of these hepatosplenomegaly had been present since birth. The entrance complaints of a 17-month child were an enlarging abdomen of one month's duration followed by jaundice and vomiting of one week's duration. The 2 older children complained of persistent vomiting, jaundice, abdominal enlargement and swelling of the ankles of several week's duration. At the time of admission all 5 were jaundiced and had prominent abdomens. All 3 infants had enlarged livers and spleens and one had ascites. Both older children had ascites and dependent edema. One of these had a hydrothorax and an enlarged liver. The spleen was not palpable in either instance. The hemoglobin content of the blood ranged between 28 and 80% and the white blood cell count between 8,000 and 21,000 per cu. mm. Bile was absent from the stools of the 3 infants. The van den Bergh reaction was direct in all instances and the serum bilirubin ranged between 1.7 and 24.6 mg. %. The serum proteins ranged between 4.9 and 6.7 Gm. % and the A/G ratio was reversed with a range of .31 to .69. The Wassermann reaction was negative in all cases. The 17-month infant died soon after admission. The other 4 were subjected to exploratory laprotomy. Two children died soon after operation and the third died 2 months later. The fourth child, aged 5, had an enlarged spleen and a small stippled liver. An omentopexy was done by Dr. Randolph Jones, Jr. Two years later the child was living and well, without jaundice, ascites or edema. The plasma proteins at that time were 6.4 Gm. % with a normal A/G ratio of 1.4.

The final diagnosis was based on autopsy findings in 3 cases and on biopsy in the other 2. One 4-month infant had obstructive biliary cirrhosis and the other an unclassified cirrhosis. The 17-month infant had portal cirrhosis. Both older children had an unclassified type of liver cirrhosis. The persistence of jaundice in a young infant, associated with an enlarged liver and clay-colored stools, suggests a biliary-tract anomaly causing biliary cirrhosis. In older children the onset is usually insidious. Anemia, anorexia, weight loss, hepato-splenomegly, ascites, edema, bleeding into

the intestinal tract, and a direct van den Bergh reaction plus a reversed A/G ratio are common features. An abdominal paracentesis should be done when ascites is present since it is of diagnostic value. Obstructions or anomalies of the extrahepatic biliary ducts require plastic surgery. Gallbladder drainage may relieve an infectious hepatitis. Occasionally an omentopexy or splenectomy is of value. With any treatment the prognosis is poor. All, except one, of these patients died within 6 months after the onset of symptoms.

Splenic Anemia.—Four cases are included in this series. The ages ranged between 4 months and 12 years. Three were males. The 2 older ones had histories of hematemesis accompanied in one instance by abdominal pain and in the other by transient abdominal swelling. A 3-year child had transient jaundice. During routine examination splenomegaly was found in the youngest one. At the time of admission all had enlarged spleens and all but one had enlarged livers. None had jaundice, ascites or edema. One was markedly anemic and the others were moderately anemic. The white blood cells were between 3,300 and 8,100 per cu. mm. The Wassermann reaction was negative in all instances. In 3 cases splenectomy was done; one of these patients could not be traced postoperatively, another was living and well one year later and the third was alive 3 years later but was malnourished and stunted. The fourth child had a splenectomy elsewhere; he died suddenly 6 months later of an unknown cause.

Diagnosis depends on a history of abdominal pain, hematesmesis and diarrhea. The spleen is always, the liver often, enlarged. Anemia and leukopenia are usually present. In advanced cases cirrhosis of the liver may cause jaundice, ascites and edema. A preoperative diagnosis is presumptive and requires the exclusion of all other conditions which may give the same findings. The treatment of choice is splenectomy. Some untreated patients may lead a comparatively normal life for many years; but most of them die of cachexia, hemorrhage or intercurrent infection in a few years. Pemberton[6] reports a cure of 50% following splenectomy in the first 2 decades of life.

Ovarian tumors.—Four children with ovarian tumors were seen. One was a 5-year white girl with a smooth, midline, non-tender suprapubic tumor which had gradually enlarged since first being noticed 6 weeks before admission and had reached the level of the umbilicus. The general physical examination and routine laboratory work and x-ray studies, including intravenous pyelography, were negative. Exploratory laparotomy revealed a malignant cystadenoma of the left ovary. A panhysterectomy was performed and irradiation was carried out postoperatively. The child was well and without evidence of recurrence 8 months later. The second child was a 13-year white girl with a large cystic mass filling the entire abdomen which had been present for one year. During that time she had had several attacks of sharp, cutting pain in the lower right quadrant of the abdomen. During her first attack appendicitis was suspected and the abdomen was explored. A large cystic mass was found but she went into shock before any attempt could be made to resect the mass. At the time of admission the general physical examination and the routine laboratory work were negative. A gastrointestinal x-ray series showed that the intestinal tract had been pushed upward and backward by a large intraäbdominal tumor. Exploratory laparotomy revealed a large pseudomucinous cystadenoma on the right side. Resection of the tumor and the ipsolateral ovary and tube was followed by uneventful convalescence. The patient was well and without evidence of recurrence one year later. The third patient was a 20-month colored child who was brought to the hospital with an abdominal tumor which had appeared 4 months previously, and had enlarged rapidly. There were no other complaints. Physical examination revealed a well developed and nourished child with a large firm, immovable lobulated mass which filled the entire lower abdomen and was predominately on the right side, but did not extend into the flanks. Routine laboratory findings and x-ray studies including intravenous pyelography were negative. Irradiation caused no shrinkage in the size of the mass. Exploratory laparotomy revealed a large dermoid cyst of the right ovary which was removed. Convalescence was uneventful. The fourth child was a 7-year colored girl who began to complain of abdominal pain one week before admission. Several days later swelling of the ankles appeared and examination by the family physician revealed an abdominal mass. The child did not appear ill. There was a large non-tender mass occupying the the right lower quadrant. The tip of the mass could just be reached by rectal examination. There was slight bilateral ankle edema. Pyelograms showed moderate dilatation of both ureters and pelves. A barium edema showed the colon to be displaced upward by a pelvic mass. The non-protein nitrogen of the blood was normal. Laparotomy revealed an inoperable teratoma of the right ovary which had metastasized to the omentum.

Ovarian tumors are uncommon in childhood but occur frequently enough to demand consideration in the differential diagnosis. Witzberger and Agerty[7] collected 186 cases from the literature.

Of these, one third were simple and multilocular cysts, one third were combined malignant growths and one quarter were dermoid cysts. Diagnosis is not always possible preoperatively, but certain things should be emphasized. Any midline suprapubic tumor which does not disappear upon catheterization is very likely to be an ovarian tumor. A twisted ovarian cyst may simulate appendicitis so closely that a correct diagnosis is made only at the operation, but the onset of acute abdominal pain in the presence of a cystic tumor should suggest the presence of a twisted ovarian cyst. Those rare cases of precocious menstruation associated with an abdominal tumor immediately suggest the possibility of ovarian tumor. The importance of doing a bimanual examination with one finger in the rectum should be emphasized. A barium enema will often show upward displacement of the colon. Treatment is excision of the tumor. In malignant neoplasms a panhysterectomy followed by irradiation gives the best chance for a cure.

Lymphosarcoma.—Three cases are included in this series. All were girls between the ages of 5 and 6 years. One was colored. One child began to complain of cramping abdominal pain 3 months before her admission and her physician palpated an abdominal mass at that time. She began to vomit persistently, and one month before admission was subjected to exploratory laparotomy. Enlarged abdominal glands were found but could not be removed. Shortly after operation enlarged cervical glands were noticed. Irradiation of the neck and abdomen gave no relief. The second child was first noted to be lethargic and tired 2 weeks before admission. Shortly thereafter jaundice and progressive swelling of the abdomen and ankles appeared. There were no other complaints. The third child became lethargic and easily fatiguable 6 months before admission. One month before admission the father noticed some abdominal masses. Diarrhea started soon afterwards. The child complained of abdominal pain for the first time on the day before admission. In all 3 children anorexia and weight loss were prominent features. Physical examination revealed emaciated, chronically ill children with prominent abdomens. In each instance, firm nodular masses could be palpated through the abdominal wall and by rectum. Two had generalized lymphadenopathy and one had only enlarged right axillary nodes. The blood-pressure was normal in 2 and moderately elevated in the third (120/90). One child was jaundiced and had ascites and pronounced ankle edema. Flat films of the abdomen showed soft-tissue masses in 2 instances, one showing an area of questionable calcification. Intravenous pyelography and study of the long bones were negative in one instance. Blood studies of the icteric child showed a direct van den Bergh, with a bilirubin of 9.7 and plasma proteins of 5.4 Gm.%, with an A/G ratio of 0.7.

In one child biopsy of a cervical lymph-node established the diagnosis. She died 5 months after the onset of symptoms. The icteric child died less than one month after the onset of symptoms without developing generalized lymphadenopathy. Autopsy revealed widespread lymphosarcoma which had involved most of the abdominal organs including the biliary and cystic bile ducts. The parents of the third child refused permission for biopsy of a lymph-node. She died 7 months after the onset of symptoms. Autopsy revealed lymphosarcoma of the small intestine with metastasis to the lymph-nodes. A diagnosis of lymphosarcoma rests primarily on histological study. In the presence of an abdominal tumor careful search should be made for superficial lymphadenopathy so that lymph-node biopsy can be done. Unfortunately the lymphadenopathy may occur late in the course of the disease or may never appear. Irradiation therapy may give temporary relief but the ultimate prognosis is hopeless. In these 3 cases the average survival time from the first appearance of symptoms was about 4 months.

Congenital hemolytic icterus.—An 8-year white boy was referred to the hospital with a tentative diagnosis of Gaucher's disease. He had always seemed chronically ill but had gotten along fairly well until one year before admission at which time pallor, fatiguability, anorexia and an enlarging abdomen were noticed. He had complained of pain in the left upper quadrant occasionally. Except for a remission of 2 months following several blood transfusions his condition had become steadily worse. An older brother (aged 12) and sister (aged 15) were subsequently hospitalized. These two had always had pale, yellowish complexions but had no complaints aside from occasional abdominal pain. All 3 had been treated for hookworm infestation. It was later discovered that the mother and a brother (aged 17) had the same condition. (This family will be reported in detail later). The youngest child was stunted and his face strongly resembled the mongoloid facies of erythroblastic anemia. The other 2 were fairly well developed and nourished. All 3 were pale, jaundiced and had much enlarged spleens. The 2 younger ones had enlarged livers. The 2 older ones had a triangular thickening of the circumcorneal conjunctivae. The youngest child's hemoglobin was 23% and hookworm ova were found in his stools. The other 2 also were anemic—hemoglobin 45%. Blood serum studies revealed a posi-

tive indirect van den Bergh in all 3 children with bilirubin values ranging between 3.4 and 5.1 mg.%. All had increased reticulocytes in the circulating blood and the red blood cells showed increased fragility and a decreased mean cell diameter. Studies of the sternal marrow of the 2 older children revealed no Gaucher cells. X-ray studies revealed marked thickening of the youngest child's frontal bones. Following transfusions, splenectomy was done in all 3 children. Convalescence in each case was uneventful.

The condition should be suspected when, with a splenomegaly, there is evidence of a regenerative hemolytic anemia and familial and hereditary occurrence are demonstrated. The pathognomonic laboratory findings are the increased fragility of red blood cells in saline solution, and the decreased mean diameter of these cells. The treatment of choice is splenectomy. Transfusions give only temporary relief and are contraindicated during a hemolytic crisis. In severe untreated cases the patients remain chronically ill. Many mild cases are never diagnosed. Following splenectomy the evidences of a hemolytic anemia disappear and the patient is cured in spite of the fact that the increased red blood cell fragility often persists. Recurrence of symptoms is not rare and has been attributed to the presence of an accessory spleen.

Carcinoma of the liver.—Two cases are included in this series. A 17-month white boy was admitted with a large abdominal mass. Two weeks previously the parents had accidently discovered some small non-tender abdominal masses which rapidly increased in size and coalesced to form one large mass. There were no urinary or gastrointestinal complaints. Physical examination at the time of admission showed a chronically ill, malnourished child who was not jaundiced. The abdomen was markedly protuberant. A large, hard, smooth, non-tender mass filled the entire right side of the abdomen and the upper half of the left side. Plasma proteins were 6.5 Gm.%, with an A/G ratio of 1.0. The non-protein nitrogen of the blood was 40 mg. %, and the van den Bergh showed an indirect trace. X-ray examination of the chest was negative and the film of the abdomen showed a large soft-tissue mass in the abdomen. Intravenous pyelography showed normal kidney pelves. The tumor did not shrink following irradiation and the child died 11 weeks after the masses were first noticed, without ever becoming jaundiced. At autopsy a liver-cell type of carcinoma of the liver was found. Metastasis to the lungs had occurred.

A 7-year colored boy was admitted complaining of progressive jaundice of 2-months duration. One month before admission he began to have attacks of severe abdominal pain and later vomiting occurred. The stools became clay-colored, the urine very dark. Physical examination at the time of admission showed an undernourished chronically ill child with marked jaundice and generalized lymphadenopathy. The upper part of the abdomen was quite full and peristaltic waves were seen in the epigastrium. The liver edge was 5 cms. below the costal margin. Below the liver was a large firm irregular mass which extended almost to the umbilicus. The urine contained urobilin and the stool was negative for bile. The non-protein nitrogen of the blood was 32 mg.%. The serum proteins were 7.4 Gm.% with an A/G ratio of .64. The van den Bergh was direct and the bilirubin was 10 mg.%. X-ray examination of the lungs was negative. A flat film of the abdomen showed a soft-tissue mass and a gastrointestinal series showed marked spasm and irregularity about the pylorus. Biopsy of a cervical lymph-node showed only hyperplasia. Irradiation caused some decrease in the size of the mass, but the patient died 3 months after the onset of jaundice. Autopsy revealed a large liver, studded with nodules of tumor tissue. A large nodular mass was associated with the head of the pancreas, the duodenum, cecum, bile duct and the liver, and there was metastasis to the lungs and vertebrae. The process was thought to represent a carcinoma of the liver, although a carcinoma of the pancreas could not be absolutely excluded.

Steiner[5] recently tabulated 77 cases of primary liver carcinoma in children. He pointed out that the symptomatology is not characteristic and often depends to a large extent on mechanical pressure effects. Dull pain referred to the liver region is common, and anorexia and weight loss and anemia occur frequently. Jaundice occurred in only 6.5% of the cases and was due to mechanical obstruction of the biliary tracts. Without exploratory laparotomy and biopsy, the diagnosis is presumptive. All treatment is ineffective. In Steiner's series the average duration of life after the appearance of symptoms was 4 months.

Urachus cyst.—Two cases of urachus cyst were seen. One was a 15-year white girl who began to have lower abdominal pain three weeks before admission. Shortly thereafter a swelling appeared in the umbilical area which soon began to drain foul pus. Physical examination revealed a tender midline mass which extended from 2 cm. above the umbilicus to 6 cm. below the umbilicus and 6 cm. wide. There was a small draining sinus just to the right of the umbilicus. The mass was incised and later excised. Histological study revealed an epithelium-lined cyst.

The second patient was a 2-year colored boy admitted with abdominal pain and fever of 3-days duration and slight dysuria. Examination revealed a tender midline mass extending from the umbilicus to the pubis. After several days the fever and tenderness subsided. The patient was discharged with instructions to return later for excision of the mass, but he did not return.

Patent-urachus cyst is apparently not very common. Approximately 13 cases in persons under the age of 16 have been reported in the last 20 years[9]. Most cases in children appear at birth or soon afterwards and are characterized by an abdominal fistula from which urine drains continuously or intermittently. If there is any interference with free drainage the urine may become infected and an abdominal mass may form. Occasionally a normally placed urachus may become infected later in life, and form an abdominal mass which may subside or may drain through the umbilicus. Begg[10] has discussed very clearly the embryological and anatomical factors involved. Diagnosis is based on the history of a sinus which has drained since birth, or the formation of an abdominal mass about the umbilicus lying between the peritoneum and the anterior abdominal wall. This mass may drain through the umbilicus or through the bladder, or it may subside spontaneously. In all cases, all obstruction to the normal urinary flow; *e. g.*, that from urethral strictures or phimosis, should be removed. The cyst should be excised; preliminary incision and drainage may be necessary. The prognosis is good.

Erythroblastic anemia.—The two cases of erythroblastic anemia which were seen had certain features in common. Both were in boys of Greek ancestry, who had been pale since early infancy. Both had prominent abdomens and large spleens. Both were very anemic, and many nucleated red blood cells were circulating in the peripheral blood. X-ray studies showed generalized decalification and thinning of the cortex of the long bones, and thickening of the skull bones. One had a muddy greenish discoloration of the skin and mongoloid features; also, a sibling had died with a similar condition.

One child was seen in the dispensary at the age of 11 months, but was not brought back for treatment, and died one year later. The other was first seen at the age of 3 years. He has been followed for the past 8 years, during which time he has had over 126 transfusions. Splenectomy, which was done at the age of 5 years, has increased the interval between transfusions.

The association of anemia and splenomegaly in a child of Mediterranean ancestry should always suggest the diagnosis of erythroblastic anemia. The presence of nucleated red blood cells in the peripheral blood and the characteristic changes in the skull and long bones are confirmatory. The peculiar muddy complexion and thickening of the malar bones after several years gives these children a mongoloid appearance which makes them resemble each other closely, and often causes the diagnosis to be suspected at a glance. The only treatment of proven value is repeated blood transfusions. Apparently the only effect of splenectomy is an increase in the number of circulating nucleated red blood cells. The prognosis is poor and death from an intercurrent infection or from the anemia usually occurs in the first decade of life. Survival through the adolescent period has been reported in only 6 cases[11].

Gaucher's disease.—The 2 cases included in this series have been reported in detail elsewhere[12]. They were colored siblings aged 9 and 7 who were brought to the hospital because of progressively enlarging abdomens of 4-years duration. The older child had also developed a limp and shortening of one lower extremity. Both had very large livers and spleens. One had enlarged axillary and inguinal nodes and thickening of the circumcorneal conjunctivae. Both had hypochromic anemia, leukopenia and thrombocytopenia. X-ray studies showed osteoporosis and rarefaction of the long bones. In one child the changes had resulted in a pathological fracture through the femoral neck. In both sternal bone marrow studies showed the presence of Gaucher cells, and in one a lymph-node biopsy also revealed Gaucher cells. Both children were given transfusions. One received irradiation over the spleen, the other concentrated liver. Neither of these latter two procedures resulted in appreciable improvement. A cousin of these children has a similar condition.

Diagnosis depends on chronic hepatosplenomegaly with anemia and leukopenia. Osteoporosis is common. Frequently the condition occurs in several siblings. The pathognomonic Gaucher cells can usually be found in the marrow and sometimes in the lymph-nodes. These cells can usually be found in the spleen but because of the dangers of a splenic puncture this method should be used only as a last resort. There is no specific treatment. Extreme anemia requires the use of transfusions. Splenectomy relieves the mechanical drag but, because of the operative risk, is of doubtful value. Most of these patients die in childhood of an intercurrent infection but occasionally they survive to a ripe old age.

Glycogen-storage disease.—Two cases are included in this series. A 4- year white girl was

brought to the clinic because of an enlarged abdomen. A physician had found an enlarged liver at the age of 8 months. She was a well developed and nourished child who did not appear ill. The abdomen was greatly enlarged and a mass as big as a football was palpated in the epigastrium. She was seen again 5 years later at which time her physical growth was quite retarded. A large mass in the right upper quadrant extended down to the iliac crest. The patient was subsequently studied extensively elsewhere and diagnosis of glycogen-storage disease was made.[12]

The other child was a 4-month white boy brought to the hospital because of an enlarged liver and spleen. He was poorly developed with a rounded head and a prominent abdomen. Horizontal nystagmus was present. The liver extended down to the right iliac crest. The spleen (or left lobe of the liver) was palpated 4 cm. below the left costal margin. Acetonuria was present intermittently. Fasting blood sugar was 86, plasma cholesterol 175 mg.%. An x-ray picture of the chest showed an enlarged, boot-shaped heart. X-ray examination of the abdomen and long bones was negative. Because of the difficulty of obtaining sufficient blood, satisfactory glucose tolerance and adrenalin tolerance studies could not be made.

The diagnosis depends on the presence of hepatomegaly or cardiomegaly, sometimes associated with nephromegaly, combined with evidence of disturbed carbohydrate metabolism. The latter is manifested by acetonuria, hypoglycemia, hyperglycogenemia and abnormal glucose and adrenalin tolerance curves. Occasionally more than one member of a family has the disease. A positive diagnosis depends on histological and chemical confirmation of the abnormal glycogen storage in the affected organs. There is no known effective treatment. Many of these children die of an intercurrent infection in the first year of life. Those who survive are usually physically stunted.

Urinary tract anomalies.—Both of these patients were colored. A 16-month boy was brought to the hospital because of weight loss and urinary dribbling of several-months duration. The child was constipated and vomited occasionally. His abdomen had always been prominent and had enlarged more rapidly for the several months just prior to admission. He was a malnourished infant with a protuberant abdomen. A cystic pelvic mass extended up to the umbilicus. There were smaller firmer masses in each lower quadrant. Urine dribbled almost constantly; it contained a few pus cells and a trace of albumin. Non-protein nitrogen of the blood was 80 mg.%. Retrograde pyelograms showed markedly dilated ureters and pelves. Endoscopic examination revealed a congenital posterior urethral valve and reflux up the left ureter. When an indwelling catheter was inserted the abdominal mass disappeared. Constant bladder drainage failed to relieve the nitrogen retention and the patient died one month after admission.

A 7-week girl was admitted because of constipation and a progressively enlarging abdomen since birth. A diagnosis of megacolon had been made. She was an undernourished child and had a very prominent abdomen, a smooth cystic mass filling the entire left flank and left half of the abdomen. The urine was negative. A flat film of the abdomen showed a soft-tissue mass in the left abdomen. A barium enema showed displacement of the colon to the right. Exploratory laparotomy revealed a partial obstruction of the left ureter and a greatly enlarged left renal pelvis with a deformed, apparently non-functioning, left kidney. A left nephrectomy was done. Partial evisceration necessitated secondary abdominal closure later, but the child was discharged in good condition 6 weeks after admission. The non-protein nitrogen content of the blood was 50 mg.% 3 days after operation, at which time the child was partially dehydrated. Subsequent determinations gave normal values.

Each of these children had a congenital urinary-tract obstruction, which had caused dilatation of the urinary tract higher up. If the obstruction is at the bladder neck or in the urethra the dilatation is bilateral. The location, degree and duration of the obstruction determine the amount of dilatation and infection. Kidney insufficiency may give rise to uremic symptoms—vomiting, headache, anemia and failure to develop. Infection usually develops, especially with lower-tract obstructions, and is manifested by frequency of urination, dysuria, pyuria, fever and leukocytosis. Extreme dilatation of the bladder, as in one of these children, may cause paradoxical incontinence. Enuresis is common and pressure on the intestinal tract often causes constipation. The diagnosis is confirmed by pyelography. One of these cases was not diagnosed preoperatively, no pyelograms being made. If the anomaly is in the bladder or urethra it can be seen with an endoscope. The non-protein nitrogen content of the blood is of diagnostic and prognostic importance. These symptoms and findings may appear at any time, but most of the severer anomalies manifest themselves in infancy.

Treatment consists in relieving the obstruction in order to prevent further kidney damage and clear up the infection. Supportive measures, including transfusions, are often helpful. Often the patient's poor condition requires the use of preliminary drainage by means of catheterization or

suprapublic cystostomy. If the damage is confined to one side, and the other kidney is functioning well, nephrectomy may be necessary. The prognosis depends on the nature and location of the anomaly and the amount of premanent damage and infection present when treatment is instituted. The patient's general condition is also an important factor.

Genital tract anomalies.—A 13-year white girl and a 12-year colored girl were brought to the hospital because of lower abdominal pain. The white girl had recurrent attacks lasting several days in the preceding 10 months. The colored child was hospitalized after 4 days of pain. Neither had ever menstruated. Examination of the white girl revealed a firm, slightly tender suprapubic mass the size of a grapefruit. The hymen was intact. The colored girl had a smaller similar mass and the labia were widely separated by a bulging mass covered by an imperforate hymen. Surgical treatment of the white child revealed congenital atresia of the cervical os with resultant hematometria and hematosalpinx. The uterus and tubes were removed. The other child had an imperforate hymen and a hematocolpos. The hymen was incised. Recurrent attacks of lower abdominal pain plus a suprapubic tumor, in an adolescent girl who has never menstruated, suggest a genital obstruction. Appropriate examination will reveal the anomaly. Whether or not fertility can be preserved depends on the type of anomaly and the amount of permanent damage.

Hodgkin's disease.—Five months before admission an 11-year white boy began to complain of epigastric and chest pains. Intermittent abdominal swelling appeared and later alternating attacks of diarrhea and constipation. One week before admission dependent edema was noticed. He was very anemic, undernourished, had fluid in the chest, pronounced ascites and dependent edema. The liver and spleen were much enlarged. The superficial lymph-nodes were not enlarged. Following several transfusions the ascites subsided and a globular mass the size of a small apple was palpated just to the left of the unbilicus. Roentgenological study showed one filling defect on the lesser curvature of the stomach and another in the transverse colon. At exploratory laparotomy the mass was seen to be composed of enlarged lymph-nodes, histological study of which revealed Hodgkin's disease. Radiation therapy resulted in temporary shrinkage of the abdominal mass, but the patient died one year after the onset of the first symptoms.

Hodgkin's disease is usually accompanied by enlargement of the superficial lymph-nodes which makes biopsy and diagnosis fairly simple. In the absence of superficial lymphadenopathy, the presence of an abdominal tumor may lead to a laparotomy. Any patient suspected of having Hodgkin's disease should have x-ray examination of the chest, since mediastinal masses are often present. Irradiation usually gives temporary relief but repeated irradiation becomes progressively less effective. Death usually occurs within 3 years, although a patient occasionally may survive 15 years. In view of the possible association of Hodgkin's disease and brucellosis[34], sulfapyridine and antimelitensis serum also should be used.

Lymphatic leukemia.—Examination of patients with lymphatic leukemia will usually reveal hepatosplenomegaly, with or without generalized lymphadenopathy. Occasionally other abdominal organs are enlarged. When the characteristic blood picture is absent the diagnosis may be quite difficult. The following case is a good illustration. A 2-year white boy was admitted with a history of vomiting and abdominal pain of 2-months duration. Physical e amination revealed a well developed and nourished boy who did not appear ill. The heart and lungs were clear and there was no lymphadenopathy. The liver edge was palpable 4 cm. below the right costal margin. The right kidney was felt 3 cm. below the right margin. The left kidney extended down to the pelvic brim. No other abdominal masses were palpated. Blood studies showed the hemoglobin to be 78%. The white blood cells were 8480, with 40% polymorphonuclear leukocytes and 54% lymphocytes. An x-ray picture of the lungs was negative. Intravenous pyelography showed both pelves to be dilated without being distorted. The patient was in the hospital for 3 weeks. Three days before death the right submandibular glands enlarged. The next day a right internal squint appeared and a blood count revealed 35,000 leukocytes with many lymphoblastic cells. A blood count done one week before this had shown 4840 white cells with 75% polymorphonuclear leukocytes. Autopsy revealed acute lymphatic leukemia with leukemic infiltration of the kidneys as well as almost every organ of the body. Normal blood pictures shortly before death from leukemia have been noted before[35].

Colloid carcinoma of the colon.—A 15-year white boy came to the hospital because of intermittent attacks of lower right quadrant pain of 5-weeks duration. Two weeks before admission he noticed a mass in the lower right quadrant. Cathartics had given no relief. Physical examination revealed that the onset of abdominal pain was accompanied by the appearance of a tubular mass in the region of the cecum. Subsidence of the pain was accompanied by a gurgling sensation, following which

the mass disappeared. The remainder of the physical examination was negative. A barium enema showed complete obstruction at the cecum. Exploratory laparotomy revealed an annular constriction about the middle portion of the ascending colon caused by a colloid carcinoma. This was resected and postoperative irradiation administered, but the patient died one year later with recurrences. Because of the rarity of intestinal carcinoma in childhood a correct clinical diagnosis is very uncommon. The treatment is excision but the prognosis is very poor.

Retroperitoneal teratoma.—A 2-year colored girl was admitted to the hospital because of a progressively enlarging abdomen since birth. She was a malnourished child with a protuberant abdomen in which several firm, nodular, painless, freely-movable masses could be palpated. Another mass could be felt by rectum. A flat film of the abdomen showed several soft-tissue masses, one of which contained a calcified area. Intravenous pyelograms were negative. The abdomen was explored and with great difficulty a very large retroperitoneal non-malignant teratoma was removed. The patient died on the fifth day after operation of uremia due to extensive kidney damage. Autopsy revealed that the entire tumor had been successfully removed. In this instance the tumor was correctly diagnosed preoperatively on the basis of a calcified area in the tumor. If the operation had been done before the tumor became so large the patient might have survived, since the tumor was benign.

Retroperitoneal lipoma.—A 3-year white boy was referred to the dispensary because of a progressively enlarging abdomen since birth. Except for occasional lower abdominal pain there were no complaints. He was a malnourished child with an abdomen distended by an irregular, nodular, non-tender, slightly movable mass which filled the entire left side of the lower body cavity. The remainder of the e amination was negative. The child was subsequently operated on elsewhere and a large retroperitoneal lipoma resected. He was alive and well without evidence of recurrence one year later[16].

Abdominal tumors undiagnosed.—Seven such cases were seen.

An 8-year colored girl was admitted with a history of a dull aching pain in the abdomen, back and lower extremities. She had been walking on her toes and keeping her back arched. Three weeks before admission a tender mass appeared in the upper abdomen. The mass gradually enlarged and moved into the lower abdomen. Constipation, dysuria and frequency developed. Physical examination revealed a chronically ill child with rigidity of the neck and back, which caused her to assume a position of opisthotonos. There was moderate bilateral exophthalmos, most marked on the left. The abdomen was distended and a large, firm, tender, irregular mass extended up from the pelvis to the umbilicus and almost to the left costal margin. Passive motion of the right hip was moderately painful. A flat film of the abdomen showed several areas of calcification in the left lower abdomen. X-ray pictures of the skull, lungs, spine and long bones were negative except for some irregularity and cortical thinning in the upper right femur. Exploratory laparotomy revealed a huge rubbery mass in the pelvis which was not biopsied because of its extreme vascularity. In spite of postoperative irradiation she died at home 4 months later. The tumor was probably a neuroblastoma.

A 10-year white boy was admitted because of a progressively enlarging abdomen, dyspnea and pallor of 5-months duration. At the age of 3 the patient had a swollen abdomen for 8 months and then apparently recovered completely. He was a stunted, pale, dyspneic boy with bleeding gums, abdomen greatly distended, liver and spleen both greatly enlarged, and ascites present. There was a marked reversal of the A/G ratio of the serum proteins. The parents refused to grant permission for a splenectomy. The probable diagnosis was cirrhosis of the liver.

A 10-month white girl was brought to the clinic because of an abdominal tumor of 6-months duration. This had not responded to irradiation administered elsewhere. She looked to be a healthy child, except for a large mass in the right upper quadrant. The mother refused to leave the child for further investigation. The child returned 2½ years later with the mass unchanged in size. Intravenous pyelography showed the right renal pelvis to be flattened and displaced towards the midline. The mother refused permission for operation and took the child home. The tumor was probably a benign neoplasm or cyst of the kidney.

A 9-year white girl was admitted with a history of vomiting, diarrhea, jaundice and dyspnea of several-years duration. Two months before admission edema, ascites and hydrothorax appeared. She was jaundiced, had a large abdomen, the liver was slightly enlarged and the spleen extended down to the iliac crest. Permission for splenectomy was refused. The child died several weeks after discharge. She probably had cirrhosis of the liver.

A 4-year white boy was brought to the clinic because of a palpable epigastric tumor, jaundice and hydrothorax of one-week's duration. He looked chronically ill, was jaundiced, had a prominent abdomen, ascites and pitting edema. The liver was

much, and several superficial glands moderately enlarged. The parents refused to leave the child. He died 2 weeks later.

An 8-year white girl was admitted because of aphasia, convulsions and progressive abdominal swelling of 16-months duration. Palpation revealed a firm non-tender mass filling the entire right side of the abdomen. Routine laboratory and x-ray studies were negative. Irradiation caused temporary shrinkage of the tumor but the child died 6 months later.

A 3½-year white girl was brought to the clinic because of a rapidly growing abdominal tumor of 4-weeks duration which had appeared 7 months after a kidney tumor was removed elsewhere. The tumor filled the entire left half of the abdomen. The parents refused to leave the child. This probably was a recurrent Wilm's tumor.

present for more than one year it is almost certainly not a malignant neoplasm.

The physical examination should include a blood pressure determination (elevated with Wilm's tumor), a rectal examination (ovarian tumors and lymphosarcoma) and a vaginal examination (hematocolpos). Mongoloid facies suggests chronic hemolytic anemia (erythroblastic anemia and congenital hemolytic icterus) and ecchymosis or proptosis suggests a metastatic neoplasm (neuroblastoma). A wedge-shaped penguecula-like thickening of the circumcorneal conjunctivae was seen in 2 diseases (Gaucher's disease and congenital hemolytic icterus).

Laboratory tests are important in establishing the diagnosis. Leukopenia may be present (splenic anemia, Gaucher's disease, aleukemic leukemia). Blood-smear studies may reveal many nucleated

Table I

*Abdominal Tumors and Enlargements**

Diagnosis	Total patients	Alive	Dead	Condition unknown
Wilm's Tumor	24	2	19	3
Neuroblastoma	6	0	6	0
Cirrhosis of the Liver	5	1	4	0
Splenic Anemia	4	2	1	1
Ovarian Tumors	4	1	0	3
Lymphosarcoma	3	0	3	0
Congenital Hemolytic Icterus	3	3	0	0
Carcinoma of the Liver	2	0	2	0
Urachus Cyst	2	1	0	1
Erythroblastic Anemia	2	1	1	0
Gaucher's Disease	2	2	0	0
Glycogen-Storage Disease	2	2	0	0
Urinary-Tract Anomalies	2	1	1	0
Genital-Tract Anomalies	2	2	0	0
Hodgkin's Disease	1	0	1	0
Lymphatic Leukemia	1	0	1	0
Carcinoma of the Colon	1	0	1	0
Retroperitoneal Teratoma	1	0	1	0
Retroperitoneal Lipoma	1	1	0	0
Total Neoplasms	44	4	34	6
Total non-neoplastic conditions	24	15	7	2
Abdominal Tumors of Undiagnosed Type	7	1	5	1
	75	20	46	9

*Not including megacolon, nephrosis, congestive heart failure, tuberculous peritonitis, appendiceal abscess and sickle-cell anemia.

Summary

Children with abdominal tumors present interesting and often puzzling problems in diagnosis. Exploratory laparotomy usually will reveal the nature of the disease, but every effort should be made to diagnose the condition before operation. Only in this way can useless and even harmful major surgical procedures be prevented.

A careful history may suggest the possibility of a racial or familial disease (erythroblastic anemia, congenital hemolytic icterus, Gaucher's disease, glycogen storage disease) which can be confirmed by further study. If the tumor has been

red blood cells (erythroblastic anemia) or abnormal white blood cells (leukemia). The combination of increased fragility and decreased diameter of the red blood cells is pathognomonic (of congenital hemolytic icterus). A decrease in serum proteins, particularly with a reversal of the normal A/G ratio, indicates liver disease (cirrhosis or neoplasm) or albuminuria (nephrosis). Pyuria and hematuria suggest urinary-tract involvement (Wilm's tumor, urinary-tract anomalies, urachus cyst). Complete x-ray studies are necessary. A flat film of the abdomen may show calcification in the tumor (neuroblastoma, dermoid, lympho-

sarcoma). An intravenous pyelogram should be made in all cases because so many of these tumors involve, or are closely associated with, the urinary tract (Wilm's tumor, neuroblastoma, urachus cyst, urinary-tract anomalies and sometimes leukemia and glycogen-storage disease). A chest film may show an enlarged heart (glycogen-storage disease, chronic anemia), mediastinal masses (Hodgkin's disease, leukemia) or metastatic neoplasm (Wilm's tumor, neuroblastoma). Skull films may show a characteristic thickening of the cortex (erythroblastic anemia, congenital hemolytic icterus), destructive lesions (metastatic Wilm's tumor and neuroblastoma), or separation of the suture lines (metastatic neuroblastoma). X-ray pictures of the long bones may show periosteal elevation (metastatic neuroblastoma, leukemia), destructive lesions (metastatic neuroblastoma and Wilm's tumor, Gaucher's disease), or atrophy and cortical thinning (erythroblastic anemia, congenital hemolytic icterus, Gaucher's disease). Elevation of the blood non-protein nitrogen content indicates extensive renal damage (urinary-tract anomaly). Hypoglycemia and unusual sugar curves are suggestive (of glycogen-storage disease). Biopsy of a lymph-node (lymphosarcoma, Hodgkin's disease, Gaucher's disease, metastatic neuroblastoma), or bone-marrow studies (leukemia, Gaucher's disease) will often aid in diagnosis. If there is any question of fecal impaction repeated enemas should be given. However, partial, or even complete, disappearance of an abdominal mass following enemas should not lead to cessation of further investigation. The fecal impaction may be due to a small tumor which will not become palpable until days or weeks later. Response to irradiation is often of diagnostic importance. Practically every Wilm's tumor will shrink rapidly following irradiation. Every patient who is irradiated should have daily blood counts. The leukopenia which commonly occurs is no contraindication to further therapy, but careful watch should be kept for any indication of agranulocytosis and aplastic anemia. The treatment depends on the diagnosis. Inoperable neoplasms often respond temporarily to irradiation (Wilm's tumor, Hodgkin's disease, leukemia; sometimes neuroblastoma, lymphosarcoma, ovarian tumors). Operable neoplasms are treated surgically, either alone or in combination with irradiation (Wilm's tumor, ovarian tumors, retroperitoneal tumors). A laparotomy may be necessary to determine whether or not a tumor is operable. Certain conditions respond well to splenectomy (splenic anemia, congenital hemolytic icterus, occasionally liver cirrhosis). Surgical intervention is indicated in certain other non-neoplastic conditions (urinary-tract anomalies, urachus cyst, hematocolpos). Vigorous supportive measures, including blood transfusions, often are necessary.

In general the prognosis is poor. The cases have been classified as neoplastic or non neoplastic and the results tabulated (table 1).

Conclusion

1. The diagnosis, treatment and prognosis of a series of abdominal tumors in children have been discussed.
2. Preoperative diagnosis will be facilitated by careful history taking, thorough physical examination and complete laboratory studies including x-ray and biopsy studies.
3. The prognosis is very poor in the neoplastic tumors, fair in the non-neoplastic tumors.

Thanks are extended to Drs. E. P. Alyea, Bayard Carter, Deryl Hart and R. B. Raney for permission to include patients from their services, to Dr. R. J. Reeves for the interpretation of the x-rays, and to Dr. A. J. Gill for the review of the pathological specimens.

References

1. This group will be reported in detail by Drs. E. P. Alyea and W. C. Daniel of the Department of Urology.
2. Bradley, J. E. and Pincoffs, M. C.: The Association of Adeno-Sarcoma of the Kidney (Wilm's Tumor) with Arterial Hypertension, *Ann. Int. Med. 11*:1613, (Mar.) 1938.
3. Daniel, W. C.: The Hypertensive Factor in Wilm's Tumor (to be published).
4. Parsons, P. B. and Platt, L.: Calcification in Abdominal Neuroblastomas (to be published).
5. Lehman, E. P.: Adrenal Neuroblastoma in Infancy, Fifteen-Year Survival, *Ann. Surg. 95*:473 (Mar.) 1932.
6. Pemberton, J. Results of Splenectomy in Splenic Anemia, Hemolytic Jaundice and Haemorrhagic Purpura, *Ann. Surg. 94*:755 (Oct.) 1931.
7. Witzberger, C. M. and Agerty, H. H.: Ovarian Tumors in Infancy and Childhood, *Arch. Ped. 54*:339 (June) 1937.
8. Steiner, M. M.: Primary Carcinoma of the Liver in Childhood, *Am. J. Dis. Child. 55*:807 (April) 1938.
9. Hebst, W. P.: Patent Urachus, *South. M. J. 30*:711 (July) 1937.
10. Begg, R. C.: The Urachus and Umbilical Fistulae, *Surg., Gyn. and Obst. 45*:165 (Aug.) 1927.
11. Thalheimer, E. J., Mezzeth, A. and Gershan-Cohen, J.: Cooley's Anemia, *J. Ped. 14*:349 (Mar.) 1939.
12. Pachman, D. J.: Chronic Gaucher's Disease. *Am. J. Dis. Child. 56*:248 (Aug.) 1938.
13. Watkins, W. M.: (personal communication.)
14. Parsons, P. B. and Poston, M. A.: The Pathology of Human Brucellosis, *South. Med. J. 32*:7 (Jan.) 1939.
15. Brenneman, J.: *Practice of Pediatrics, W. F. Prior Co., Inc.* Hagerstown, Md., 1937, v. 3 Ch. 18, p. 19
16. Shaw, W. T. (personal communication)

CLINIC

Conducted By
FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North Carolina

CEREBRAL HEMORRHAGE, THROMBOSIS AND EMBOLISM

These conditions, at least the first two of them, are so common, yet so varied in their clinical manifestations, that no one or two cases can be described in detail that can serve as adequate illustrations of the whole subject. It seems, therefore, wiser, in dealing with this subject, to cite in a somewhat rambling manner a number of different types.

Cerebral embolism is uncommon as compared to hemorrhage and thrombosis. It usually occurs in younger persons, and its diagnosis depends on signs of a focal brain lesion developing suddenly and a focus in the heart from which an embolus could be detached. Very rarely, if there be a deficiency in septum in the heart so that the two sides are not entirely separated, a paradoxical embolism may occur, arising in a systemic vein which is the seat of thrombophlebitis; but, without such a septal defect, the embolus of necessity goes to the right side of the heart and thence into the pulmonary circulation and can not reach the brain. It is fairly obvious that cerebral embolism is the explanation of a hemiplegia developing suddenly in a relatively young person with valvular disease in the left side of the heart. It may be quite spectacular when superadded upon severe congestive heart failure in a case of mitral stenosis.

No hard-and-fast line can be drawn between thrombosis and hemorrhage. Either may develop gradually. A very severe stroke developing suddenly in a person with hypertension suggests hemorrhage rather than thrombosis; but only necropsy can make the diagnosis certain. Thrombosis sometimes develops with surprising suddenness. When syphilis it at the bottom of the trouble and recovery is rapid on specific treatment, thrombosis is much more likely than hemorrhage. Serologic examination should be made in all cases of focal brain lesion in young or middle-aged persons, especially in the absence of hypertension. An example of a sudden attack probably due to a thrombus occurred in the case of a man aged 39 who, while driving a car, found his right leg and arm getting numb and weak. He managed to park his car at the side of the road, and then realized that the right side of his body was helpless and that he had lost the power of speech. Fortunately a friend in the car with him could drive him home. He was known to have had syphilis, and the Wassermann reaction was positive. Treatment was started at home with mercury and iodides and when he improved enough to come for treatment, arsenicals and bismuth were given, and in a few weeks all trace of his paralysis had cleared up.

The classical hemiplegia is well known. A very puzzling thing is the development in some of these cases of a *flaccid* paralysis. It has been taught that this is due to initial shock, but it may persist after all evidence of shock has disappeared. Why this occurs in an upper motor neuron lesion I cannot say.

Some very bizzarre things occur in connection with these cerebral vascular accidents. I know of a case in which a man who was noted as a writer of letters of usuual literary merit had such a stroke and after that could still write as good a letter as ever, was not blind, wrote his usual beautifully clear handwriting, but was unable to read a word of it. His center for word perception by vision had been destroyed. Another patient after his stroke gave this strange answer to all questions—"Boys and girls, boys and girls." Still another was bereft of all words except those two which are the most useful to retain if one can have but two— "yes" and "no." He could use these perfectly intelligently in reply to questions, thus his wants could be ascertained.

Certain strange character changes may develop as the result of vascular accidents, chiefly in the frontal lobe. A veritable old saint became almost unbearably cross and irritable after such an occurrence.

Alvarez has pointed out that certain digestive disturbances that do not yield to treatment beginning very suddenly in a hypertensive patient often depend on a vascular accident.

The manifestations are so varied that one could write a book on the subject. Suffice it to say that one should consider vascular accidents in all cases of cerebral disturbance beginning suddenly, that sources for emboli should be looked for, and the presence of syphilis determined or excluded.

[illegible]

Injections at bi-weekly intervals, starting with a dose [illegible] seldom went above 100,000,000

[illegible]

T. reaction in treating trigeminal neuralgia.

Snake venom in a trial group proved unsuccessful in relieving pains of this character.

DEPARTMENTS

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

SIGMUND FREUD

A few days ago in England the physical body of Freud died and a day or so later the body was cremated.

He was born in Moravia, he was a Jew, he made and sustained his reputation as a medical philosopher in Vienna. From that city he was banished a year or two ago. His philosophy and the Hitlerian philosophy must have been as antithetical as light and darkness. Such two conceptions of man's place in life could not live together in the same country—not, perhaps, in the same world, for both philosophies could not represent the expression of truth. Freud was old, well beyond eighty; he had become, at least, physically, decrepit, and it was well for his body to die. It was, indeed, all well—well that he lived, well that he stirred the waters of the immaterial world as they had not been so stirred since the life on earth of Socrates and of Jesus, well that he was a Jew, well that he was banished from Vienna by Hitler, well that he went to England and that he died there. I doubt not that he died in peace with himself and with his God.

More than three hundred years have gone by since Shakespeare wrote *The Merchant of Venice*. Have I not been told that no Jew was living in England at that time, and that William Shakespeare never saw a Jew? Since then Disraeli has been Britain's Prime Minister, Judah P. Benjamin, our Confederate States' Secretary of War, has been England's great lawyer, and Lord Reading, another Jew, has adorned high office in England. What a tale is told, not by Freud's flight from Vienna, but by his dignified retirement from the country that has become non-existent, into England to be amongst people with whom, though alien to him in language, in religion, in politics, in philosophy, he could live in safety and amongst whom he could live his own mental and spiritual life freely. Spatially, Austria and England are not far apart. Yet how many centuries may it be before the people of Russia and of Germany and of Italy and of once-Poland can know the freedom of spirit that is known by the people of the British Isles and of the United States? And the people of these great so-called democracies are still cursed by ignorance and by prejudice and by ineptitude in government.

Yet we owe chiefly to members of the race to which Freud belonged the highest and the best that we have in literature and in law and in religion. The Jews gave to the world, finally, after much struggle and after many tragedies, a dignified and majestic God, and a religious literature that continues to keep the printing presses busy, so great and unceasing is the demand for it in all the languages that man reads.

What has Sigmund Freud given to man? He has given to mankind his own conception of man as a spirit, just as his far-distant forebears gave to mankind their conception of God as a spirit. Virchow dealt with man as a many-times multiplied cell, whose varied functions give man life and behaviour. Freud gave to man the conception of man as mind and matter, and of mind manifesting itself through cellular mechanisms. Freud acquainted man with his ignorance of himself. He revealed to man his ignorance of his own behaviour—both in origin and in meaning. Until civilization had gone a long way, man had no knowledge of his physical structure. Man was anatomically unacquainted with himself. Few individuals even of today have any definite knowledge of their physical architecture and of the functions of their organs. A little more than three hundred years ago man did not know that his blood circulates. The demonstration and proof of that basic fact in most animal life had to await the coming of William Harvey. How slowly we learn! The demonstration to man that his immaterial attributes are much larger than his physical structure, and of equal importance, and that he knows no more about them, even within himself, than he knows of his own anatomy and of his own physiology, had to be made clear and emphatic to him by Sigmund Freud. That buried portion within himself of man's immaterial structure—his instincts, his emotions, his intellect, his spirit—that part of it of which man is not even conscious during his every-day life, and to which he is adding from birth to death, is called the unconscious or the subconscious. Feud revealed to man his possession of a subconscious, and the importance of it as the most influential of all his attributes.

Out of the subconscious comes most of man's daily conduct that is not of purely intellectual origin, and out of it come, of course, his dreams, his nightmares, his prejudices, his superstitions, his religion, his automatic behaviour, his passions, his fears, his hopes, his joys, his yearnings, his neuroses, his habits—good and bad—his insanities, his crimes, his patriotism, his cowardice, his courage, his depravity and his grandeur.

Freud conceived of man as a mentality, and of

behaviour as the most important feature of man's life. He believed behaviour to be the exhibition of the mental state. Freud's long life was devoted to the attempt to understand behaviour, to rob it of mystery, and to interpret it in terms of man's past and with reference to his present and his future. I doubt if Freud thought of behaviour as rational or irrational. It represented to him, perhaps, modified responsiveness. Freud probably thought of behaviour as being as comprehensible and as free from mysteriousness as oxidation and perspiration are. Those physiologic phenomena are but fractional aspects of behaviour.

Instinct is that behaviour-tendency concomitant of structure that is inherited from far-away ancestors. Certain instinctive urges may have come into existence so far back in man's history—before man was human—that we cannot now understand the purposes of such urges. For that reason it may be impossible for the most profound intellect to understand all conduct. But Freud assumed that most behaviour is understandable, and that conduct as a phenomenon is worthy of investigation, and that most behaviour can be followed back to its causes. He believed, of course, that in the attempt to understand behaviour man should lay aside his snobbishness—intellectual and ethical—and that he should try to analyze behaviour as he would analyze a chemical compound, without the use of conceptions of wrong and of right. Why does the living thing do as it does? was the persisting Freudian interrogatory.

How little I must know of what the great man thought! He wrote in German, and I read little in that language. Once I heard a learned rabbi in a funeral service intone in the original Hebrew in which Moses probably wrote it the ninetieth psalm, not a word of which I could understand. But never before nor since have I been so impressed by the human voice. Nothing inherently great can be fully translated into another tongue. I know, therefore, that I do not know Freud as I would know him had I read him in his native German.

Yet I think of him as believing that he was looking upon the manifestations of God's laws at work, whether he was reading a psalm of David, listening to a symphony, analysing a dream, appreciating a joke, observing the behaviour of a maniac, sympathizing with the wretchedness of a melancholiac, assembling the data in the life-history of a confirmed criminal, or contemplating his own expulsion from his native country and the persecution of his fellow-religionists. Cause and effect, law and order, reason and impulse, sanity and insanity—scarcely at all, I imagine, did Freud think of behaviour as rational or irrational. Whatever man's conduct, to him it must have represented the attempt of the individual, consciously or unconsciously, to declare himself.

In the domain of behaviour Freud made explicable the simple as profound and the pompous and the impressive as probable concealments. To him a slip of the pen might disclose more about the individual than an autobiography, and a slip of the tongue than a death-bed confession. Nature is honest, though man may be untruthful. He believed that man does not lose or accidentally misplace, but that behaviour is purposeful and not fortuitous. He thought of man as an expressive being, and that when his tongue is still man tattles with his finger tips.

Freud's chief contribution to thought was that of a disturber of our complacency. The world of philosophy had become static and inactive. Freud stirred the domain of the immaterial profoundly. So also did Moses and Jesus. Does that help to account for ages-old anti-Semitism—the tendency of mankind to hate the Jew—because he is a constant disturber of man's intellectual laziness and of man's intellectual unhonesty?

STAGE FRIGHT AND NEUROSES IN PROFFESSIONS IN GENERAL (FRANCIS VOLGYESI, Budapest, in *Med. Rec.*, Sept. 20th)

The term neurosis was originated by Pierre Janet and signified originally the degenerative diseases of the nerves, as contrasted with those of an inflammatory origin, a discrimination made like that between nephrosis and nephritis.

It is characteristic of the persons affected by stage fright and in general of the other neurotic patients that the feeling of anxiety sooner or later evokes the feeling of panic which overwhelms the whole being. Where panic begins common sense ceases; men have been drowned in puddles not deeper than 10 inches.

It is a characteristic feature of cultured humanity that it overestimates its intellectual world, the power of common sense, while it underestimates the power of feelings.

The cerebral cortex, as the most superior organ (neopallium) is many million years younger than palencephalon spinal cord organs, which are present in all mammalia and show a nearly identical character. In practical life, whenever a conflict arises between common sense and the world of sentiment, the victory is never gained by the former, especially if collective psychical manifestations are involved.

A. E. Mander, an English social scientist, recently proclaimed that the "unmotivated inclination to generalisation, which cannot be condemned harshly enough, is a gaping wound on the body of mankind. Tuberculosis, syphilis, nay, even cholera and the pest, taken all together, did not cause so many individual and collective evils and sufferings in human bodies and souls as this 'pathological generalisation'. In fact, the generalisation is nothing but an irradiation process of those unconscious spheres which is quite independent of common sense (the cerebral cortex), but the more supported by sentiments. This is the case with neurotic, phobiatic and stage-fright-stricken individuals and also in the psychic life of the crowd.

Like the torrent of a tremendous inundation, feelings

overflow the fields of critics. Useless to contend against them with the weapons of persuasion or philosophy, useless to point to catastrophic consequences.

Persons affected by stage fright are badly suffering from their underestimation of their individual value. They make efforts to disguise this sentiment as far as possible by dissimulation, but still more by hypercompensation.

As to the method of curing neurotic or stage-fright-stricken people, in certain cases hypnotic methods must play the chief part, but also in this sphere the problem is by no means simple.

The phobias (stage fright included) being neuroses of the sentimental spheres of the palencephalon, it is obvious that they may occur with well developed psychoactive individuals possessed of a sound brain ladder as well as with less developed or less sound psychopassive persons. Only the course of the disease, the dissimulations, the modes and shades of hypercompensation may differ according to the state of mind. Also, therapy ought to be always adjusted, individually and intraindividually, to the given situation and to the evervarying individual conditions.

Highly intelligent neurotic individuals and also those affected by stage fright carry amulets and cabalistic keepsakes in the firm belief that they will help them over critical moments.

Jendrassik said that "the fate of every neurotic man depends on the question of whether he succeeds in finding his right doctor."

UROLOGY

For this issue, JOHN RHODES, M. D., Raleigh, N. C.

UNILATERAL CALCULOUS PYONEPHROSIS

A Case Report

RENAL destruction due to the combination of stone-formation and infection, one usually dependent on the other, is by no means a rarity. The following case is cited, less because it represents an extreme degree of the condition than because of the secondary symptoms leading to confusion and delay in the discovery of the primary renal disease.

An insurance salesman, 42, was referred March 29th, 1939, by Dr. Hugh Thompson, because of pyuria. For the past 3 months he had complained of dull, aching pain in the left lumbosacral region. The pain radiated down the left leg. Occasionally, there had been sharp pains in the left hip, especially when taking an awkward step. The pain had been severe enough to cause limping and the use of a cane. During the period of the present illness he had spent at least three weeks in bed. Urinary symptoms were absent except for occasional nocturia. A diagnosis of rheumatism had been made, for which the tonsils had been removed without relief. The patient had received about 40 osteopathic treatments, each of which seemed to give temporary relief. He stated that he was told that the pain was due to slipping of the hip joint and that manipulation replaced the joint.

The general health had been good prior to the current illness. At the age of 15 he had had kidney colic and passed several small stones. He did not recall on which side the colic occurred. There had been no subsequent urinary symptoms.

Examination showed a well developed and well nourished man of middle age. The abdomen was non-tender. There was no palpable mass or viscus. Rectal examination revealed a moderately enlarged, indurated, tender prostate. The seminal vesicles were not palpable. Catheterization was done easily. There was an ounce of cloudy residual urine loaded with leukocytes. A smear of the prostatic secretion contained numerous leukocytes. No organisms could be seen. Culture of the urine showed colon bacilli and staphylococci albi.

A diagnosis of non-specific prostatitis was made. At the end of a month of massage and bladder irrigations there was little remaining pain, and pus in the prostatic secretion had been greatly reduced; but, in spite of liberal use of various urinary antiseptics, the urine showed no lessening in the amount of pus.

FIG. 1.—A large, staghorn shadow may be seen to occupy the position of the right kidney.

Cystoscopy revealed generalized redness of the bladder. There were no stones, diverticula or tumors. The prostate was not enlarged. An abdominal x-ray picture showed a very large, staghorn shadow occupying the area of the right kidney (fig. 1). A urogram made after intravenous injection of dye showed the dye filling the left kidney pelvis in 5 minutes. The left kidney was enlarged, apparently as the result of compensatory

hyperplasia. No evidence of dye could be seen on the right side either surrounding the stone or outlining the ureter in 30 minutes. The non-protein-nitrogen was 32 mgms.

At operation May 12th, 1939, the right kidney was found to be densely adherent to the surrounding fatty tissue. There was considerable induration of the fat. An intracapsular nephrectomy was done and the wound closed except for drainage. The kidney cortex was found to be thinned and almost completely replaced by stone. There was a quantity of purulent fluid in the pelvis. The stone weighed 114 grams and represented a cast of the dilated pelvis and calyces.

Convalescence was uneventful. The urine promptly became free of pus. The patient was discharged from the hospital on the 18th day after operation. He returned to work 5 weeks from the date of operation. There has been no rheumatic pain since operation. The urine now contains an occasional pus cell, as does the prostatic secretion.

It is reasonable to assume that the prostatic infection resulted from the renal disease. The rheumatic symptoms were due to this secondary manifestation of renal infection.

This case demonstrates that extensive damage may result to the kidney from progressive stone-formation without sufficient symptoms to direct attention to the upper urinary tract. Pyuria persisting in spite of medical treatment warrants complete urological study without much delay. A kidney may often be salvaged when an early diagnosis of progressive disease is made. An obstructive lesion, anomalous or acquired, to which stone formation and infection may be secondary, may be detected and corrected while the kidney retains adequate function.

GENERAL PRACTICE

WALTER J. LACKEY, M.D., *Editor*, Fallston, N. C.

THE FAMILY DOCTOR'S TREATMENT OF URINARY-TRACT INFECTIONS

IN the September issue my co-editor, Dr. Hamner, made his first contribution to this department, and well written it was—full of information and inspiration. In this article Dr. Hamner expressed appreciation for being selected co-editor of the department and gave high praise to the work of Dr. Johnson and Dr. Northington. My conscience would not allow me to go any further in this short writing without expressing my appreciation for being allowed to contribute to this department and to express my highest regards for excellent work done by Dr. Johnson and Dr. Northington. Many years of success in your new work with the *North Carolina Medical Journal*, Dr. Johnson!

During my ten years of general practice of medicine, Dr. Northington has encouraged and helped me in so many ways I will never be able to repay him for his kindness. He has always worked energetically and faithfully for the progress of the medical profession and especially for the family doctor. I am proud indeed to contribute what I can to his excellent journal, *Southern Medicine & Surgery*.

One of the common conditions that a general practitioner meets in his every-day practice is urinary-tract infections. Infections of the urinary tract are not infrequently overlooked, not because a doctor does not know how to diagnose such conditions but because it is easy not to take the time to get a specimen of the urine from the patient. It is easy for the doctor to watch a patient for several days for consolidation of the lung or for rose spots on the abdomen to develop when later the urine is found to be loaded with pus. Many patients with urinary-tract infections do not have pain and frequency of urination. All patients with an undetermined fever should by all means have urinalysis done, and alwasy get a catheter specimen in women. It takes only a few extra minutes to catherterize a patient in the home or the office and that time may mean much to the patient.

Much progress has been made recently in treating urinary infections. Formerly we had to rely on a number of preparations, from urotropin on up to the most expensive preparations, all of which were usually slow in rendering the urine free of bacterial infection, or did no good at all. For the past few years other drugs have come into use which have proven very successful. One of these is preparations of mandelic acid. A convenient way of giving this drug is the elixir madelic acid, tablespoonful doses three or four times a day to adults—children in proportion to age. Park Davis & Co. make a concentrated syrup of mandelic acid—usually given in two-teaspoonful doses three or four times a day for adults. Tablets of mandelic acid can also be purchased. In giving mandelic acid it is necessary that the urine have the proper acidity. This can be determined by adding five drops of methyl red to 2 c. c. of urine and if a definite red color appears the proper acidity is present; if not, some drug such as ammonium chloride should be given to give the urine the proper acidity. This is an easy test to do and can be made every time the patient's urine is examined. In giving mandelic acid it is advisable to limit the 24-hr. fluid intake to 1200

to 1500 c. c., to aid in rendering the urine acid.

It is amazing how promptly many cases of urinary infection will be cleared up with the administration of this drug. If no improvement is seen in a few days—say eight—the drug should be discontinued. Best results are obtained in colon-bacillus infections of the urinary tract.

In my practice in treating pyelitis and cystitis I use mandelic acid first, and if the drug fails I try sulfanilamide. Sulfanilamide gives excellent results in many cases of urinary-tract infection. For an adult I usually prescribe 10 to 15 grains by mouth every four hours for several days and then gradually decrease the dose. Children are given the drug in doses according to their age. If the drug produces nausea or vomiting neoprontosil tablets are tried. These tablets seem to be less nauseating. As for patients who cannot tolerate any of the sulfanilamide preparations prontosil can be given intramuscularly. Recently some men have reported good results with sulfapyridine. Lately I have tried this drug with excellent results in a few cases.

The family doctor can treat at home most all of the uncomplicated cases of pyelitis and cystitis, and this means much comfort and money in the patient's pocket. I disagree with some of the specialists who say that in every case the cystoscope should be used. It is true that some cases need further study and when the family doctor feels it necessary to refer the patient to a urologist he should do so by all means. But first study the case yourself, and most cases can be treated satisfactorily and efficiently at home without going near a specialist or a hospital. This is the duty of the general practitioner and the more work he does that he is capable of doing the less will be the cost of medical care and the less howl we will hear of State Medicine.

This short writing does not allow a discussion of the toxicology of the drugs mentioned above and, of course, the general practitioner should be familiar with all the ill effects that may occur.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Aerobacter Cloacae Septicemia

The average small hospital laboratory is not fully equipped to analyze all of the organisms which come to it for diagnosis. Such an instance was recently encountered when a certain organism looked like, but did not culture out as, a colon bacillus. The preliminary report, "probably colon bacillus," brought a request from the clinician for a more thorough investigation. A portion of the culture was sent to the National Hygienic Laboratory at Washington. In three weeks time this laboratory reported the organism to be *Aerobacter cloacae*. The old terminology lists this organism as *Bacillus cloacae*, three lines being given it in Park and Williams' bacteriology textbook. Its characteristic feature is the slow liquefaction of the gelatine culture medium; thus the three-weeks delay in receiving our report from Washington.

The organism was recovered from the blood of an acutely ill 9-month infant in July 1939. Seventy-two hours prior to hospitalization the child had fallen against a red-hot stove and received severe burns on the palms of both hands. First-aid was administered at home and additional treatment by the family physician the following day. Three days later the child developed a fever of 107 and convulsions. When the family physician was unable to stop the convulsions or to lower the fever, the child was sent to the hospital. Just before being sent to the hospital the child passed a large black stool. No drug had been given to explain such a stool. No other abnormal stools were passed.

The child weighed 24 pounds, did not appear desperately ill despite the admission temperature of 107°, was quite somnolent, the throat was acutely inflamed, the knee jerks exaggerated, and the pulse rate was 120. The breathing was deep and pauseless, constantly at 100 per minute, and without acetone odor.

When the throat swab did not reveal streptococci, as was anticipated, further search had to be made for the cause of the fever. The burns of the hands were carefully examined but no evidence of infection was revealed. They had been treated with butesin picrate ointment. No organisms were recovered from the burns. The blood studies showed: red cells 3,890,000, hgb. 68%, white cells 10,250—polys. 82 (seg. 51, stab. 31), lymphs. 18. The admission urine except for 3-plus albumin was negative. Spinal puncture fluid was negative. On admission, all the laboratory data told us exactly nothing. Blood culture—reported 16 hours later—"probably colon bacillus."

The child was placed in bed and treated with cold packs. In 12 hours the temperature was down to 103. Convulsions ceased. Hypodermoclysis of 5% glucose in Lactate-Ringer's solution and sodium amytal, gr. 3, per rectum completed the first night's treatment. The following morning, on the basis of a gram-negative organism in the blood culture, neoprontosil, gr. 2½, was begun: and this was given by mouth every 6 hours for

3 days and the same drug was given intramuscularly in gr. 6 doses every 12 hours for 3 doses. Shortly after starting the neoprontosil the temperature returned to 107 and then fell to normal by lysis in 48 hours. Forty-eight hours after starting the drug a second blood culture was plated and reported "no growth after 72 hours incubation." Daily urinalyses showed nothing abnormal except the presence of albumin. A second spinal tap on the 3rd day was negative. The blood counts showed a gradual clearing of the infection. The single stool culture was reported "colon bacilli predominating." The blood for culture was taken from the shaved anterior frontanel under the usual aseptic technique.

The child was discharged from the hospital on the 7th day, essentially well. The family physician has since reported the child to be in good health.

Several interesting observations were made of this child in the course of his illness. The somnolence continued until the 4th day in the hospital. The child could be aroused but would immediately return to sleep. This may have ben due to the neoprontosil but it was identical to the state of somnolence observed on admission before the drug had been given. It cleared rapidly, however, when the drug was discontinued, even though the temperature had been normal for twenty-four hours.

Another observation concerned the rapid (100 per minute) type of pauseless breathing which continued until the temperature returned to normal when it suddenly also returned to normal rate. There was never any laboratory evidence that the rapid breathing was due to either an alkalosis or an acidosis. The pulse rate was proportionate to the temperature.

The third unusual observation was the peculiar rash over the forehead and back. This rash was seen on the initial examination and attributed to heat. It, too, was observed before the use of neoprontosil. No new lesions developed, but during the use of the drug the lesions became more intense. They did not blanch on pressure. In appearance they resembled purpuric eruptions. The rash faded before the neoprontosil was discontinued.

After the 3rd day in hospital the child made a spectacularly rapid recovery. Never having seen or read of another case of this type of infection, credit can be given the action of the drug administered, for the recovery reminded one of the response of other infections to sulfanilamide where indicated. After a cursory review of the literature only two references to this organism as a human pathogen could be found. Both of these references[1,2] recount food poisonings after the ingestion of cream puffs. The fillings were found to have been the vehicle for the same organism, *Aerobacter cloacae*, which caused the septicemia in the case here reported.

References

1. Gilbert, Ruth, et al. *Am. J. Pub. Health* 22: 727, 1932.
2. Buchanan, E. B. and Megrail, E.: *J. of Inf. Dis.* 44:235, 1929.

SURGERY

Geo. H. Bunch, M.D., *Editor*, Columbia, S. C.

Persistent Ductus Arteriosus

The radical changes which take place in the circulation at birth strikingly illustrate the innate power of physiological adjustment with which we are endowed. This is a striking feature of the wonder of life itself, an intangible something that science cannot explain and which, perhaps, man can never understand fully.

In medical school the writer was taught that jaundice of the new-born came from infection through the umbilical cord and that it might be prevented by aseptic technic. Now we know the condition is physiological and not pathological. A degree of anoxemia is physiological for the fetus in intrauterine life and the full-term fetus is in a normal state of cyanosis. "At birth the *arterial* blood of the fetus contains less oxygen than the blood in the maternal arm *vein*." Because the placenta is not an efficient aerating agent hypercythemia is a necessary condition in the fetus. After respiration begins the excess of red blood corpuscles is no longer needed. Hematogenous jaundice follows their physiological destruction. It is always present but may not be of sufficient degree in every new-born infant to be recognized.

To relieve the fetal heart of the necessity of pumping the blood to the collapsed lungs during intrauterine life, these are in effect side-tracked from the circulation by the foramen ovale which connects the right auricle with the left auricle and by the ductus arteriosus which connects the arch of the aorta with the pulmonary artery. Both communications, normally, close soon after birth.

The ductus normally closes within the first month of life but in a few cases patency persists. When respiration begins the ductus, being in effect an arterio-venous aneurism, puts increased work upon the heart by shunting the blood from the peripheral circulation. For some reason the condition is often complicated by vegetative endocarditis. Two thirds of the cases are in girls. Physical development is retarded. In the early years of life the heart may be able to compensate although the patient tires easily and gets short of

breath on exertion.

Physical evidence of patency may be wanting in infancy but becomes increasingly manifest until the fourth year of life when typical symptoms have developed. Then the heart is over-active and very forceful. "There is a loud, rough continuous murmur, with systolic accentuation, heard best in the second or third interspace, to the left of the sternum[2]. The murmur is machinery-like and is transmitted over the precordium to the back and to the axillae. The blood pressure is normal, the pulse pressure high. Fluroscopically there is increased pulsation in the dilated pulmonary artery. The heart is enlarged so that it may almost fill the chest. Cyanosis though often present is not pronounced, as in the blue baby of patent foramen ovale.

In conclusion, it is of practical interest to know that patency of the ductus may persist even into adult life, that the symptoms are very suggestive, that the physical signs are diagnostic so that recognition is usually possible. Gross[2] has recently reported having successfully ligated the ductus in four cases with relief of symptoms and without mortality, a real surgical accomplishment.

References

1. Clifford and Irving, Anaesthesia and the New Born Infant, *S. G. & O.* 65:23, 1937.
2. Gross, Surgery of the Ductus Arteriosus, *Annals of Surg.* Sept. 1939.

Drainage in Acute Appendicitis

(Sir Alan Newton, Melbourne, in *Australian & New Zealand Jl. of Surg.*, Jan.)

Many appear to believe that it is tantamount to a confession of surgical incompetence to drain the abdomen after the removal of an acutely inflamed appendix, that the mere presence of a tube in the wound brings in its train dangers greater almost than those attending the inflammation of the appendix itself, and that if a drainage tube be used, it should be removed not later than 48 hours after the operation. As a result of this widespread belief, I have seen in consultation many patients, in the last few years, in whom death or prolonged postoperative morbidity, after the removal of an acutely inflamed appendix, was attributable, in my opinion, either to lack of drainage or to premature removal of the tube.

The effect of this teaching has been harmful. At the Royal Melbourne Hospital the dictum "when in doubt, drain" was generally obeyed, a tube having been used in 38.4% of the total number of cases. This policy was temporarily abandoned after the publication of Brockman's paper. The results were immediate and catastrophic.

A potent factor in restricting the use of a drainage tube is the fear of fecal fistula, residual abscess and intestinal obstruction. These risks have been exaggerated. In the Royal Melbourne Hospital in a series of 995 cases drainage was used in 382. There were 15 cases of sequelae, two of these in patients not treated by drainage. The incidence after drainage was 1.3%. Thirteen of the 15 cases healed spontaneously. There were 17 cases of residual abscess, in two of which drainage had not been employed, so that the incidence after drainage was 1.5%. The incidence of intestinal obstruction during convalescence was only 0.5%.

It is my practice to operate, in the great majority of cases of acute appendicitis, through a muscle-splitting incision, and to drain, when necessary, through this incision. When a drainage tube is used it is necessary to guard against the effects of pressure exerted by the tube upon structures adjacent. This can be achieved by replacing the tube after 48 hours, by another *of equal length but smaller diameter*. This tube is replaced, after a similar time, by a third, which is of about the diameter of bicycle valve tubing, and which is finally removed when he condition of the patient warrants it. The practice of progressive shortening of the original tube is undesirable, in my opinion, because it fails to obviate the effect of lateral pressure, and may be followed by the development of a residual abscess in the lower part of the track from which the tube has been withdrawn by the shortening process. The use of tubes of diminishing diameter, but of similar length, has the additional advantage that the wound contracts down progressively upon the tube track thus obviating the risk of an incisional hernia. This contracting process is assisted by the fact that widespread wound infection is much less common when drainage is employed.

Complications usually ascribed to the presence of a tube are not uncommon when drainage has not been employed; drainage can be used in acute appendicitis without fear that its disadvantages will outweigh the undoubted advantages which accrue from its use. I therefore suggest that there should be a general reversion to the practice best expressed by the axiom "when in doubt, drain."

HOSPITALS

R. B. Davis, M.D., F.A.C.S., *Editor*, Greensboro, N. C.

Now is the Time

If the Democracies of the world had stopped Hitler the day he set foot in the Rhineland there would have been no world war going on at this moment. No doubt, in my mind, they saw the need of putting an end to injustices, dishonesty, trickery, bribery, faithlessness; but what nation or group of nations had the determination, stamina and backbone, or the conviction to do this job? There is but one time to put down the wrong thing and to support the right thing. That time is the moment that wrong is recognized as existing in the conduct of the individual, group of individuals or nations. There are a great many things worse than death, but from the conduct of the human being, particularly in recent years, it would not seem so. There was a time when a man's word was his bond and friendship meant loyalty until death. The cost of being loyal, the cost of keeping one's word did not enter into consideration. The right prevailed because it was right no matter what toll it took. Those who were left behind preserved the precious heritage handed down to them from their ancestors.

Those of us in hospital work, particularly that of directorship and trusteeship, should bestir ourselves to see that right is carried out no matter what the individual cost may be. Too long we have procrastinated and set the right in the shade because it interfered with personal and private privilege of some influential persons who might by chance retaliate upon those of us who are supposed to mete out justice. What a great day it would be to meet out justice. What a great day it would be if the Puritan's idea could once more dominate the hearts and minds of the present-day administrators of our hospitals. Let confusion not arise between conviction and diplomacy. Diplomacy has its place; but when it becomes part of a personal, ambitious scheme, perpetrated for the sole purpose of individual gain, it is no longer diplomacy but dishonesty. Dishonesty, clothed in any clothing whatsoever, has no place in the hearts and minds of big men and women, and great will be the day when this fact is recognized and appreciated.

The fear complex is a powerful complex. Its chief ally is timidity. When one allows himself to become afraid of the conduct of another individual it is only natural and normal that he should avoid doing or saying anything which would displease that person. However, the price which one has to pay for fear is far greater than anything which the other fellow might be able to do to him.

How can hospital administrators, superintendents etc. benefit by the foregoing statements? Investigate your institution and see what is going on.

The writer has been authoritatively informed that many of our hospitals are having considerable trouble with their medical staffs. The three sources of most of this trouble are as follows: First, the doctors will not examine their patients carefully and record their examinations. Second, almost every doctor on the staffs wants to operate regardless of his qualifications. Third, those who are given the privilege of the operating room will not make and record preöperative diagnoses, will not call consultation before doing D-and-Cs and have the consultant write his opinion; and, last but not least, will operate when operations are not indicated. If any or all of these conditions exist in your hospital it is time to act.

One of the first questions which will pop in your mind, I am sure, will be: What can be done to remedy this situation? The one and only answer is, The Right Thing. The medical staff of the hospital should be informed that the hospital authorities do not feel justified in keeping on their staff any physician who refuses to coöperate in this regard. This should not be given as a Hitler bluff; it should be definitely determined and dismissal from the staff temporarily carried out. Fear that the doctor should carry his patients to some other hospital should not enter into a compromise with the right.

There is no good reason why the attending physician should not carefully examine his patient and make a proper record. It does not take more than an hour to do this, and it should be done, whenever possible, on the day of admission—certainly within the first three days. Most of the hospitals are anxious and willing to furnish a stenographer to take down the findings, and most of them go so far as to have a historian who takes the histories. No one who is interested in running an approved hospital can afford to overlook the important question of histories and physical examinations. I know of one hospital, which, because of its indifference to this particular item, lost its rating in the American College of Surgeons. What did they do about it? The directors of that institution passed a hard-and-fast rule that no doctor should be allowed the privilege of taking his patients to that hospital unless his histories were up-to-date. This meant that if you had a single patient who had left the hospital without his records being complete you would be denied the privilege of this hospital. That was a very fine piece of discipline, not born of fear but of determination and conviction.

When it comes to the privilege of doing major surgery the hospitals are responsible if they pass upon the qualifications of a physician. The patient has every right to believe that if he enters an approved hospital and pays to that hospital operating room and laboratory fees and for board, room and nursing services, drugs and dressings, these services will be followed through by a competent surgeon. For, it must be remembered, Mr. Hospital Administrator, that you pass upon the qualifications of that surgeon before he is allowed to operate, and that the patient knows you have certified his ability. If you have done so on any ground other than that of competency, I would like to ask you the direct question, Are you playing fair with your community and your patient?

The third and last much neglected field is the most dangerous one, yet it is easy to make corrections here, if the fear complex does not overtake the management. The rule of the hospital should be that a preoperative diagnosis must be put on the chart before the patient is draped for operation. If this is not done there should be no operation by that surgeon. A consultation should be demanded by the hospital before any D-and-C is carried out except in the dire emergencies which should not occur more than six or eight times a year, and should not occur in the practice of the same two or three physicians even

to that extent. The consultant should be one of the surgeons on the active staff. The opinion and recommendation of this consultant should be written before the operation. Whether or not a surgeon is operating without definite indications can easily be determined by reading his history and by the pathological report on the specimen removed. If he is doing so to the extent which reaches beyond that of ignorance or inability to make a diagnosis then it goes to the extent or dishonesty. Do you want to be operated on by a dishonest surgeon?

I submit this article for your careful consideration. I hope it will help to prevent a fear complex, and if it does I am sure it will be of great value to the hospital operators where such difficulties exist.

TUBERCULOSIS

P. P. McCain, M.D., *Editor*, Sanatorium, N. C.

Miniature Chest X-ray Films in Tuberculosis Control

A recently developed method of making miniature x-ray films of the chest cheaply and rapidly will probably aid substantially in the further control of tuberculosis.

The method consists in making miniature photographs with a special camera of the image of the chest on a fluoroscopic screen. It is understood that the materials cost approximately 5c per person, and that with one unit several hundred x-ray examinations can be made in a single day.

The necessary equipment for making the films, however, is expensive. At present also it is too heavy to be portable, so that its use is now limited to large centers. It is necessary to use 400 to 500 milliamperes to produce a sufficiently bright image of the chest to get a clear photograph. This requires a rotating anode x-ray tube, a powerful x-ray machine and high-power steady current. An effort is being made to develop a type of condenser discharge x-ray machine which will be so light and durable as to be transportable in a trailer, which will not necessitate expensive x-ray tubes and which can be used with ordinary 110-volt current. If these efforts meet with success, the equipment can be used wherever electricity is available.

Recently the Tuberculosis Division of the Detroit Department of Health made a study of 1500 patients showing positive tuberculin tests on whom they made miniature chest films by the method above described and also 14" x 17" chest films by the usual procedures. Dr. Bruce Douglas, the Controller of tuberculosis for the City of Detroit, who directed the study, recently stated to the writer that the miniature films showed minimal lesions with an accuracy almost equal to the large films.

Hope for the control of tuberculosis depends on discovering the disease in the minimal stage. At present less than 20% of cases discovered are minimal and more than 50% are far advanced. The main reason for such a condition is that minimal tuberculosis rarely causes any symptoms and few or no distinctive physical signs.

Hope for early discovery depends on wide use of the tuberculin test and on making x-ray films or fluoroscopic examinations of all positive reactors.

It is not practicable to make a study of the whole population, nor is this necessary. Practically all cases of tuberculosis could really be discovered early if the following groups were studied:

1. All patients with suspicious symptoms.
2. Those most likely to have the disease—those who are living or who have lived in contact with an open case of tuberculosis; adolescents and young adults who are associated in large groups, such as high school and college students; industrial workers; and those living in communities where the morbidity and death rates are high.
3. Those whose occupations are such as to make them especially dangerous in case they have tuberculosis — school-teachers, janitors, nurse maids, bus drivers, cooks and other food-handlers.

OBSTETRICS

Ivan Marriott Procter, M.D., F.A.C.S., *Editor*

The First American Congress on Obstetrics and Gynecology

The first American Congress on Obstetrics and Gynecology was held in Cleveland, September 11th to 15th. The idea of such a meeting was born in the Central Association of Obstetricians and Gynecologists several years ago. A committee from that organization, with others from various national, district and local societies interested in obstetrics and gynecology, approved the idea and requested the American Committee on Maternal Welfare to promote the congress. A committee with Dr. Fred Lyman Adair, of Chicago, as chairman, and Dr. James R. McCord, of Atlanta, as Secretary of the Program Committee, planned and executed in an excellent manner this gigantic task. The American Committee on Maternal Welfare, organized in 1919, has become a potent force in raising the standard of obstetrical care in the United States.

Registration for the Congress began at 2 p. m. Sunday, September 10th, the scientific program at 9 a. m. Monday. This continued in one of several branches until 4:30 p. m. Friday. Sections were the medical, the nursing, the public health and the section on hospital administration and education. A recess between 11 and noon was followed by multiple round-table discussions on various subjects in each of the sections. Joint sessions on medical, nursing and public health problems of maternal and infant welfare were held in the afternoons. On Tuesday afternoon there was a meeting of state directors of maternal and child health, their medical staffs and the United States Children's Bureau, and there were comprehensive reports from several states scattered throughout the union. My conclusions drawn from the Indiana report were as follows, favoring:

1. Adequate payment of physician for services.
2. Two-weeks physician course in the state university.
3. Clinics in the local county health offices.
4. Prenatal clinics in public hospitals.

In Alabama the work among Birmingham indigents is divided up between physicians. A seminar is held by the clinic staff on the conduct of labor. A copy of the prenatal record is sent from the clinic to the hospital and private physician and copy of the labor record is sent back to the clinic file. It has been recommended that physicians who could not be taught good obstetrics be eliminated from this work; that all physicians be allowed to request a part of the work and that they be rotated on service for periods of three months. Physicians failing to qualify would be eliminated from the permanent staff.

The evenings were used for programs of interest to the general public, Dr. Allan Dafoe speaking Monday evening on the Care of the Quintuplets and Premature Infants.

The technical exhibits as usual were numerous and helpful in acquainting physicians with newer and better obstetrical and gynecological armamentaria.

Although there were present nearly 3000 physicians, nurses and others interested in the health of women and children, a great opportunity was lost by many more thousands who would have derived benefit and profit by attending this congress. The programs were designed for the general practitioner, but were technical enough to be of interest to the specialist. Radicalism and ultra-conservatism were omitted and a middle-of-the-road viewpoint was generally presented.

The programs covered every branch of obstetrical and gynecological practice. For example the Monday program consisted of:

Modern Concepts of the Relations Between Heart Disease and Pregnancy.
Treatment of Diabetes in the Pregnant Woman.
The Problem of Pregnancy in the Tuberculous Woman.
Nutritional Factors in Pregnancy.
The Surgical Abdominal Complications of Pregnancy.
The Treatment of Abortions.
The Toxemias of Pregnancy.
Genital Infections.
Benign Gynecologic Hemorrhages.
Fetal and Neonatal Mortality in Placenta Praevia and Premature Separation of the Placenta.
Forceps. Occiput-Posterior Position and Breech Presentations.
Anesthesia, Analgesia and Amnesia in Labor.

Programs the four following days were equally varied, interesting and instructive.

Another feature of the Congress was the educational and scientific exhibits. These exhibits were very elaborate, going into minute detail for the educational benefit of those in attendance. For instance, Drs. Ivy, Danfort, and others exhibited the uterus of the monkey in labor with frozen sections. Sixteen monkeys were used during various steps of labor. The sections demonstrated clearly the dilatation of the cervix, formation of utero vaginal canal and the retraction of the cervix and the lower and upper uterine segments. Dr. Arnell and others from New Orleans demonstrated the home delivery service, showing the necessary equipment and the material for the proper conduct of these cases. Charts called attention to the indications, contraindications and dangers of certain procedures. There was an interesting graphic comparison of the incidents and results in patients delivered by doctors and midwives in the State of Louisiana. There was also a comparison of hospital and home maternal and fetal mortality rates. Motion pictures have come to be a great aid in medical as well as other types of education and this feature was not neglected at the Cleveland meeting. Instructive pictures were shown on:

Prenatal Care, Eclampsia in Hospital and Home Delivery.
Home Delivery and Repair of Tear.
Obstetric Technique.
Occiput Posteriors.
Mensuration of Pelvis.
Birth of Triplets.
Asphyxia.
Sterility.

The American Committee on Maternal Welfare is to be congratulated on presenting a comprehensive cross-section of the subject of obstetrics

and gynecology worthy of the time and attention of every physician and nurse. We hope that a similar congress will be held in 1942.

A Review of Cesarean Sections in Greenville County (R. M. Dacus, Jr., Greenville, in *Jl. S. C. Med. Asso.*, Sept.)

The cases reviewed are 210 consecutive cesarean sections performed in Greenville county from January, 1934, to January, 1939. There were a total of 11,321 deliveries registered during this period, of which 3,473 were hospital deliveries; the incidence of cesarean sections among hospital cases being 6% and the incidence for all deliveries in the county 1.8%.

Sixteen different doctors did at least one of the 210 sections; 151 (72%) were done by members of the Obstetrical Staff of the hospitals, and 59 (28%) were done by members of the Surgical or Courtesy Staff. Forty-nine cases (23%) was the greatest number operated upon by one man, while there were four doctors who operated in only one case each; 155 (74%) were done on private patients, and 55 (26%) were on service or charity patients. Only 19 (9%), of the 210 sections were on negro patients.

There were 12 maternal deaths and 43 infant deaths with a maternal mortality of 5.7% and a fetal mortality of 20%.

Compared with other hospitals in different parts of the country the incidence of cesarean section for Greenville county is high, the fetal mortality very high. The maternal mortality is average.

Dr. W. C. Hearin, Greenville, (in discussion):

I have done fewer sections as the years have gone by; I have done fewer sections relative to the number of deliveries. I believe that will be true of all of us as the years go by. I think we shall do fewer and fewer sections.

GYNECOLOGY

G. Carlyle Cook, M. D., *Editor*, Winston-Salem, N. C.

Another Sign Post in Gynecology

About a year ago a fellow practitioner referred a lady school-teacher, aged 34, to me. In the past three years she had been having headaches and swelling all over for two or three days preceding her menstrual flow and lasting in all four or five days. These two conditions are all that she complained of but they were becoming progressively more severe. Her family physician assured me that he could find no physical abnormality to account for her symptoms.

Assuming that she had no physical abnormalities, she was considered from the standpoint of pituitary affection. X-ray examination of her sella showed it to be larger than usual. After considering the normal physiology of the pituitary and making a far-fetched diagnosis, I advised her to limit her intake of salt and water during the week preceding her period and no other treatment. As I have said before, it has been a year and she reports complete relief from all symptoms on that regimen.

These are the reasons for arriving at this unusual type of treatment: the pituitary gland is composed of two lobes, which fit tightly in a bony pocket in the base of the skull; the posterior lobe governs involuntary muscle tone and the metabolism of salt and water; the anterior lobe which governs ovulation and menstruation naturally has periods of functional hyperplasia, corresponding to the sexual cycle, and during these periods of greatest activity the enlargement may be sufficient to crowd the posterior lobe and interfere with its function and vice versa.

However the case may be, this patient remains well on a regimen of that assumption.

We may go far afield in the possibilities of harmones and waste much energy in their study but we should never lose sight of the normal functions of these glands and consider all of them before giving up.

DENTISTRY

J. H. Guion, D. D. S., *Editor*, Charlotte, N. C.

Immediate Denture Service

Immediate denture service means the construction of the denture before all the teeth are removed and insertion while the anesthetic is still effective.

With the improved method the dentist now has of successfully taking impressions of the mouth with the teeth in place, the immediate placement of dentures is becoming one of the most satisfactory phases of dentistry. The practice has proved highly successful and the patients are beginning to demand the service. While all cases are not suitable for this type work at least nine out of ten are.

One of the most satisfactory things about this work is that the patients do not have to go through a embarrassing period without teeth, and that to the dentist is of great help. If we permit the patient to go without teeth pride diminishes and we lose one of our greatest aids in inducing regular wearing of plates.

The problem of esthetics, which has always been great in plate work, is done away with, as all we have to do is to reproduce the teeth that are present in the mouth or make whatever change the patient and operator might desire. The vertical dimension of the face is not lost and the expression is scarcely changed as the cheeks and lips are not given a chance to fall in and become tight or drawn.

One of the main objections expressed by the

patient is that the gums will be too sore to accommodate a plate; but that is a mistaken idea, for the plate acts as a protection to the gums and there will not be as much soreness of the mouth following extraction as there would be if the plates were not placed in at once. One thing essential to the success of this procedure is the continued wearing of the dentures, for if left out swelling of the tissues will take place and they cannot be seated again.

One of the problems the dentist has always had is to make the patient understand he or she will not be able to eat at once. With the immediate denture one does not expect to, and becomes gradually accustomed to the teeth before trying.

The total discomfort is far less in the one operation than in two.

The cost of this work is very little more than it would be if the patient waited on the gums to heal as all that is necessary when the plate becomes loose is to reline it. That takes only one day and means a small loss of time from work if the patient does not wish to be seen without teeth.

THERAPEUTICS

J. Fred Nash, M.D., *Editor*, St. Pauls, N. C.

Clinical Diagnosis in General Practice

(T. A. Griffith, Mt. Vernon, in *Ky. Med. Jl.*, Sept.)

The electrocardiogram is a wonderful aid in the diagnosis of acute coronary occlusion, but we who practice in the rural districts must be content with a b. p. reading or the presence of a friction rub. A distant heart sound means more to us that T waves.

Confronted with a case which looks like it might be early pneumonia I make a bedside chest picture using portable machine. In pneumonia the w. b. c. may be 20,000-30,000. After 24 to 48hours in coronary occlusion there is usually a fever and in a few hours a leukocytosis. Without an x-ray or an ecg. even these two conditions may confuse one. I also stain the sputum in pneumonia with methylene blue and have the sputum typed whenever possible.

In the event that sulfapyridine fails, knowing the type of pneumococcus is helpful. If the serum is available for this type it can then be given. Whether the serum treatment, which costs on the average of $75.00, should be dispensed with in the favor of sulfapyridine, which costs 1/10th of this amount, is not yet decided. It is better to use the less-toxic product, neoprontosil, in streptococcic pneumonia.

The concentration of sulfanilamide in the blood should ordinarily be from 8-12 mgms. %. This can be determined inexpensively on oxalated blood specimens.

In tuberculosis the bacilli can often be found in the early morning sputum when they cannot be detected at any other time.

Blastomycosis of the lungs should be considered when repeated stains for tubercle bacilli are negative. Diagnosis rests upon demonstrating the organism in the sputum by using 10% sodium hydroxide.

In typhoid fever and influenza there is leukopenia unless accompanied by a complication. A leukopenia may be present in pneumonia and may mean a fatal outcome. The total white count may remain normal in an occasional case of gangrenous appendicitis. However, the differential white count will be of assistance. The w. b. c. are apt to be higher in acute salpingitis than in acute appendicitis. An eosinophilia may mean intestinal parasites or trichiniasis. A guide as to whether a mild arsphenamine dermatitis is progressing toward exfoliative dermatitis is the eosinophil count—an increase pointing toward the severe type. Presence of eosinophils in the nasal secretion may mean allergic rhinitis. Increase in monocytes occurs in chronic amebic dysentery and bacterial endocarditis. An acute sore throat during arsphenamine treatment should have a total white count to rule out agranulocytosis which may be the cause of the sore throat rather than lues.

Immediately following an acute hemorrhage, blood concentration and the r. b. c. and hemoglobin are above normal. After the blood volume is restored to normal anemia is shown. Immediately after hemorrhage we also find a leukocytosis of 15 to 20,000 cells per cu. mm. Pernicious anemia has macrocytosis, the dorsum of the tongue is smooth, may be fiery red, weakness may be the first complaint; lemon-yellow skin, paresthesias and diarrhea are also common. Macrocytes may occur also in sprue, pellagra, pregnancy and carcinoma of the right colon. Unexplained anemia occurring in patients above 40 should lead one to examine the colon. Macrocytes occur in cirrhosis of the liver; however, this is a hypochromic anemia. In hemolytic anemia, which may simulate p. a. clinically, the reticulocyte response is helpful and there is an increased fragility of the red cells to isotonic salt solution.

Increase in sedimentation rate occurs in rheumatoid, but not usually in degenerative, arthritis.

The Kahn reaction is interpreted as doubtful, positive or negative. The patient should be diagnosed and not the test tube. Diagnosis in the seronegative stage by darkfield examination of chancre exudate is the ideal.

The specific gravity of the urine is low in chronic interstitial nephritis, diabetes insipidus and many functional nervous conditions. It is high in fevers, diabetes mellitus and parenchymatous nephritis. A high specific gravity when the urine is not highly colored, or when the quantity is above the normal, should lead one to suspect diabetes. In any form of nephritis a sudden fall of specific gravity without a corresponding increase in the quantity of urine may foretell approaching uremia. There may be glycosuria without diabetes mellitus, or there may be diabetes mellitus with no glycosuria.

In pyelitis the urine contains pus that can be seen without centrifuging the specimen; may be intermittent due to the temporary blockage of the ureter. In phenol poisoning the urine turns olive green and later brownish black on standing.

The Friedman test for pregnancy is based on the presence of anterior pituitary hormone in the urine. The urine should be obtained in the morning in a sterile container. Bacteria in the urine will kill the rabbit the urine is injected into.

In obtaining specimens from the mouth in Vincent's ulceration the ulcer should be cleansed first by careful swabbing to remove other saprophytic organisms. These organisms should be abundantly seen before attaching importance to them.

Gram-negative extracellular diplococci should be considered as highly suspicious of gonorrhea.

I used a biscuit of shredded wheat and tea for a test meal. Examinations performed following histamine in-

jections are probably more accurate. In peptic ulcers we usually find a hyperacidity; while in cancer of the stomach there is usually a hypoacidity. The presence of this acid in the gastric contents casts grave doubt upon the diagnosis of pernicious anemia.

While others are becoming "vitamin-hormone-sulfanilamide" conscious it is best that we as general practitioners remain "blood count-Khan-urinalysis" conscious.

A New Syndrome of Vascular Headache: Results of Treatment with Histamine: Preliminary Report.

(B. T. Horton, A. R. MacLean and W. McK. Craig, Rochester, from *Proc. of Staff Meetings of the Mayo Clinic*, 1939.)

Report on observations on 84 patients with type of headache not described adequately heretofore. Pain 2 to 20 times a week, appeared and disappeared suddenly and lasted 15 minutes to several hours; appeared with clock-like regularity, at about the same hour of day or night for weeks. Remissions and exacerbations occurred spontaneously in many cases. Frequently great tenderness on pressure over the branches of the external carotid and common carotid arteries. Usual treatment afforded no relief.

Most of the patients were in the 4th or 5th decade; knew no cause; it did not seem to be related to migraine or periodic headaches in earlier years; no familial or hereditary characteristics were present.

Pain was limited to one side of the head, constant, burning, boring type of pain which involved the eye, the temple, the neck, and often the face. It had none of the tic-like qualities of trigeminal neuralgia, and there were no trigger zones.

Coincident with the onset of the pain patients invariably described the onset of the phenomena of vasodilation on the same side of the head as the pain—swelling of the temporal vessels, engorgement of the soft tissues of the eye, injection of the conjunctiva, plugging of the nose, profuse watering of the eye and nose and flushing of the side of the face. Some of these phenomena were present in each case. Scotoma and gastrointestinal upsets were not associated with the headache, although occasionally nausea was associated.

The relationship of alcoholic beverages to exacerbations of pain in some cases was evident. Abstinence, although it afforded some relief, did not result in cure. The relationship between the menstrual cycle and bouts of pain was not striking as that observed in migraine.

Subcutaneously 0.05 mg. of histamine was given twice each day for two days, 3rd day 0.066 mg. twice a day, and by the 5th day 0.1 mg. twice a day for 2 to 3 weeks. Relief was obtained by 65 patients *for* from two weeks to 18 months. Several who had recurrences had had their recurrences relieved by another course of treatment with histamine.

Surgical intervention for the relief of this type of pain seems unwarranted.

PUBLIC HEALTH

N. Thomas Ennett, M.D., Health Officer, Greenville, N. C.,
Editor

Tuberculosis by Occupations

Under this title Dr. Leverett D. Bristol, Health Director, American Telephone and Telegraph Company, has written an article for The National Tuberculosis Association to be used in connection with the annual Tuberculosis Christmas Seal sale.

Dr. Bristol states, and sustains his statement by figures, that tuberculosis is making its last stand—and that this stand is being made among the "industrially employed" groups.

He comments: "While tuberculosis, speaking generally, is not considered strictly an occupational disease, it is the outstanding chronic disease which occurs among industrial workers and attacks all occupational groups"—that many related factors such as age, sex, race, social and economic status, housing, nutrition, habits, etc. must be given due weight.

The figures below represent a study in ten states by the National Tuberculosis Association of death rates from tuberculosis of the respiratory system in gainfully employed males, ages 15 to 64.

	Occupied Males
Professional men	26.2
Proprietors, managers and officials	43.2
Agricultural workers	46.5
Clerks and kindred workers	65.8
Skilled workers and foremen	72.1
Semi-skilled workers	102.1
Unskilled workers	184.9

These figures are not surprising but they do dramatically emphasize the fact that the tuberculosis problem is chiefly a problem of ignorance and poverty.

The Confidential Death Certificate

(Paul Parrot, in *Canadian Pub. Health Jl.*, July)

The author reports an investigation of 4396 death certificates in the Province of Quebec, as to the correctness of the statements as to cause of death and the advantages of a confidential death certificate. The death certificates investigated came from cities, including Montreal, and from rural districts. All these certificates were returned by private physicians; 504 physicians were interviewed. In 1324 instances (22.2%) the statement in regard to the cause of death was found to be incomplete, incorrect or untrue; and in 1163 of these cases, (19.5%) the cause of death was intentionally incomplete, incorrect or untrue. The certificates classed as untrue were those on which a cause of death other than the real cause was given; there were 423 such cases. In 841 cases the physician showed "a definite desire to conceal the cause of death." In 273 certificates a communicable disease was concealed as the cause of death: this was tuberculosis in 99 (36.3%), syphilis in 78 (28.6%); in 201 cases, cancer as the cause of death was concealed. These findings indicate that deaths from communicable diseases or cancer may frequently be missed in vital statistics "with the present procedure of certification." In interviewing physicians, the reason most frequently given for concealment of the cause of death (in 622 instances) was that "the certificates are seen by too many persons;" in 103 cases the real cause of death was concealed at the request of relatives. *Nearly 93% of the physicians practicing in the Province of Quebec had urged that the death certificate be made confidential; a trial of the confidential certificate is now being made in four counties in the Province.*

In Rhode Island, for the past three years, the Division of Vital Statistics, coöperating with the state district

health officers, has made an effort to determine the actual cause of death on a certificate, whenever it was known or suspected that the deceased might have died from a cause other than that stated. Results much the same as those in Quebec.

Dilute Hydrochloric Acid in Acute Infections

(T. H. Maday, Chicago, in *Clin. Med. & Surg.*, Sept.)

Hydrochloric acid as a wet dressing, in a strength of 1:250, in direct contact with pyogenic infections of all sorts is excellent treatment.

Whether intravenously, in a strength of 1:500, in 10 c. c. doses, to stimulate a leukocytic response in the living blood stream in bacteremic and systemic infections, or as wet dressings for local use in pyogenic infections, it gave uniformly successful results, and works best when general and local treatment are combined.

Chemically pure HCl, in 5- to 10-drop doses in a glass of water, sipped through a straw every 3 hours, with milk and cream mixtures as adjuncts, gave uniformly better results than the usual Sippy powders in cases of gastric or duodenal ulcers.

In cases of ischio-rectal abscess, impetigo contagiosa varicose ulcer and carbuncle of the neck, the HCl gave great satisfaction. In acute otitis media with bulging membrane, incised and canal flushed with peroxide and water, 5 drops of 1:500 HCl solution were prescribed, t. i. d., in the ear as necessary, after the type of irrigation just described.

Acute follicular tonsillitis: Ten c. c. of hydrochloric acid solution 1:500 were given intravenously; the tonsils were painted with guaiacol, 50% in glycerin; aspirin (acetosal), 5 grains q. 3. h.; and a 1:500 solution of HCl was used as a local spray.

Recurrent furuncles: A large furuncle on the left forearm, I incised and drained and applied wet dressings of 1:250 solution of HCl solution. I also gave her 10 c. c. intravenously, of a 1:500 solution, every 48 hours, or at least 3 times weekly. After 10 inj. there was no more recurrence. I advised her to take a series of 10 injections every 3 months for one year, to which she readily agreed.

Infected laceration of the left leg, caught in chain sprocket: a 1:250 solution of HCl was used as wet dressing every other day. Healing occurred in 20 days, but skin grafting of an area about the size of a silver dollar was necessary.

Wherever these dressings of dilute HCl were used, it was striking that the pus was always clinging to the gauze, leaving the wound quite clean. Local immunity was stimulated by the solution in a much shorter time than is usual; there was less pus than with other solutions or antiseptics; less pain was experienced locally; useful function was established sooner; a quicker discharge was secured for the patient; and, *it was far less expensive and time-consuming.*

The Laughlen Test for Syphilis

(Regena C. Beck, Richmond, in *Bull. Stuart Circle Hos.*, Aug.)

The Laughlen test for syphilis is less time-consuming than other flocculation tests and the results are easier to read (not interpret). It is of value in folliwing the response of sera of patients under treatment; for testing donors for emergency transfusions, and for pre-operative cases.

The Laughlen test requires as much experience and skill in its performance and interpretation and the same meticulous attention to various essential details as other flocculation tests and should be performed under the supervision of an experienced serologist.

In comparing the Laughlen test with 1000 Kline tests, 1100 Kolmer-Wassermann tests and 100 Kahn tests, the Laughlen test was shown to be just as specific and a little more sensitive than the other tests as performed in this study.

The Laughlen test is suitable as a routine test, *the positive and doubtful results to be checked by another reliable test.*

Psychic Factors in Recurrent Graves' Disease

(S. S. Bernstein, New York, in *J. Mt-Sina Hosp.*, Sept-Oct.)

Thyroidectomy does not alter the fundamental Graves' personality. The removal of most of the hyperplastic gland permits the individual to make an adjustment impossible in the presence of an elevated metabolism. Constant vigilance is essential in protecting the patient from those situations and conflicts which tend to reactivate the underlying, if arrested, disease.

The prevention of recurrences in Graves' disease can be effectively controlled to a considerable degree by intelligent supervision and psychotherapy for a prolonged period following thyroidectomy.

Angina Pectoris and Tobacco Smoking

(B. J. Birk, and H. H. Huber, Milwaukee, in *Wisc. Med. Jl.*, Sept.)

A brief review of the literature on the relation of angina pectoris and tobacco smoking is presented.

Three cases of angina pectoris caused by tobacco smoking (one in a woman) are cited. Definitely abnormal electrocardiographic changes were found prior to cessation of smoking. The electrocardiograms reverted to normal when the causative factor was removed.

Management of Neurasthenia

(W. Marshall, Appleton, Wisc., in *Miss. Valley Med. Jl.*, Sept.)

A neurasthenic is an individual who presents a mass of complaints which undermine most of the purposeful endeavors. Histamine phosphate increases the blood supply to the brain by means of vasodilation of the cerebral arteries.

The restoration of the tissue metabolism to the normal state, has, in my experience, alleviated most of the neurasthenic complaints in patients with the neurasthenic syndrome; an adequate history and a complete physical examination are essential.

One is apt to be unconcerned about a red blood count of 3 million, yet that degree of anemia may be the cause of a neurasthenic syndrome in some patients. Emphasis should be placed on the threshold of tolerence of the individual. The neurasthenic differs from other patients in his threshold; tolerence or physiological ability is an individual problem.

The metaphysical approach in the management of the neurasthenic complex may soon be a thing of the past.

What's the Matter With "Medicine"?

(Q. B. Coray, Editorial in *Ry. Mt. Med. Jl.*, July)

Perhaps we are doing too much for or to the patient. Perhaps the practice of medicine is becoming topheavy or is it just scientific curiosity on the rampage?

We must strive very hard to say to ourselves each time a patient confronts us: "Now just what would I want done if this fellow were myself?"

Apomorphine in small doses will stop an attack of paroxysmal tachycardia, probably by its effect through the vagi. It does not take a large dose of the drug. I have had no failure.—*G. E. Finkle.*

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHEN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

DAVID LIVINGSTONE
(1813-1873)

ONE of the most colorful figures of the 19th century was David Livingstone, medical missionary, explorer, geographer and inveterate foe of the African slave trade. He was born in the humble home of a shop-keeper of Lanarkshire, Scotland, in 1813 and he was buried amid universal sorrow in Westminster Abbey in 1973. At the age of ten, he began to do his share of the world's work as a splicer in a cotton mill and by the time he died at the age of sixty in the forests of central Africa he was recognized as one of Britain's greatest sons and one of the world's greatest benefactors.

In the light of the deep religious nature of the Scottish people and the widespread missionary enthusiasm that was abroad in Britain during the boyhood of Livingstone, it was not surprising that he, a lad with a venturesome spirit, should have been appealed to by the call for missionary volunteers. Nor was it surprising that one who as a boy had shown an embryonic scientific interest by searching the neighborhood for geological specimens and medicinal herbs should have found medicine particularly appealing.

By dint of hard study at night after a fourteen-hour day in the cotton mill, young Livingstone prepared himself for the university by the age of twenty-three. For two sessions he attended the medical and Greek classes in Anderson's College, Glasgow, and he also took some work in theology. In 1837 he was accepted as a candidate by the London Missionary Society and in 1840 took his medical degree in the Faculty of Physicians and Surgeons in Glasgow, and sailed at once for South Africa.

The Medical Missionary.—Medical missionaries have been impressed with the fact that Christ joined the healing of the body with the healing of the soul. They have recognized not only the great need that backward peoples have of scientific medicine but that it affords an entreé to the work of preaching and teaching. Missionary history has shown that no method has been more effective in reaching large numbers of pagan peoples with the Christian gospel than medical work. The physician has often been the means of allaying the bitterest prejudice and hostility. David Livingstone was one of the earliest of these modern medical pioneers.

Arriving in Africa Livingstone went immediately to Kuruman, one hundred miles inland, where Robert Moffat had established a mission station some twenty years before. During the next eleven years he gave himself to the opening up of the north of Kuruman with a view to planting outpost settlements. He early shut himself off from all white men and lived among the natives so as to become familiar with their language, life and laws. His medical knowledge spread his fame far and wide among the black men and he soon made friends with important chieftains. His missionary work was projected upon the opinion that the best service of the white missionary was that of pioneering and that trained natives could be left to consolidate the gains.

During his early years in Africa Livingstone came near losing his life when

he was attacked by a lion which seized him by the shoulder. "Growling horribly close to my ear," Livingstone writes, "he shook me as a terrier does a rat." It is further noted in his account of the incident that "the shock produced a stupor, a sort of dreaminess," which he compared to the influence of chloroform. "There was," he says, "no sense of pain nor feeling of terror. This peculiar state is probably produced in all animals killed by the carnivora and if so is a merciful provision by our benevolent Creator for lessening the pain of death." The lion was killed, but not before he had crushed to splinters the bone of the upper arm. This maimed limb gave Livingstone trouble until his death.

C. Silvester Horne has summarized the activities of those early years as follows:

"He had penetrated furthest north from the Cape of any white man. He had discovered Lake Ngami[1], and the upper reaches of the Zambesi. He had given Christianity a foothold among the Bakwains and the Makololo. He had converted one of the most remarkable chiefs in Central Africa. He had built three houses with his own hands, and had taught many hundreds to read. He had exercised the healing art to the relief and benefit of thousands. He had made some progress in reducing Sechuana to a grammatical language; and had even composed hymns in it. He had made invaluable scientific researches, and had enriched our knowledge of the animalia, flora and fauna of Central Africa. Above all, he had seen at first hand the horrors of the slave traffic, and had vowed himself to the ultimate prevention of this form of 'man's inhumanity to man'."

The Explorer.—Without relinquishing his interest in strictly missionary endeavors, Livingstone turned to the task of finding a route to the interior from either the west coast or the east. Up to this time all contact with the interior had been from Cape Town in the south.

With a band of twenty-seven natives he set out in November, 1853, for the west coast town of Loanda and in six-and-a-half months covered the fourteen hundred difficult miles. The journey would have been trying enough under the best possible conditions; it was made immeasurably more difficult for the explorer by a serious malaria infection from which he suffered no less than twenty-seven attacks in the course of the journey. He arrived in Loanda a veritable bag of bones suffering from fever, semi-starvation and dysentery.

The route to the west did not prove feasible for Livingstone's purpose, but enabled him to make a study of the hydrography of the country and led him to conclusions concerning the river systems that were to be essentially confirmed by other explorers.

He turned his face eastward and, returning to the interior, set out to follow the Zambesi to its mouth in the Indian Ocean. He discovered the beautiful falls of the Zambesi which he named in honor of Britain's queen Victoria. In spite of repeated attacks of fever he pushed on to the eastern coast, which he reached in May, 1856.

These journeys to the western coast and the eastern coast have been described as among the most remarkable on record. Sir John Scott Keltie says: "The results in geography and in natural science in all its departments were abundant and accurate; his (Livingstone's) observations necessitated a reconstruction of the map of Central Africa."

In December, 1865, he arrived in England after sixteen years of absence. He was overwhelmed with honors, but showed no consciousness of having accomplished anything unusual. He resigned as representative of the London Missionary Society and in 1858 was appointed "Her Majesty's council at Quilimane for the eastern coast and the independent districts in the interior, and commander of an expedition for exploring eastern and central Africa."

1. Singularly, this lake has disappeared and the site is now a morass.

Returning to Africa under this commission, Livingstone gave himself during the next six years to making extensive explorations of the Zambesi, the river Shire, Lake Nyasa and the river Rovuma. These endeavors formed the basis of the subsequent development of Britain's protectorate of Nyasaland.

He returned to England for a part of 1864 and 1865 and then went back to his arduous life in the African jungles. He was constantly hindered by floods, by the hostility of the slave trader, by the want of supplies and by the ravages of fever. By the fall of 1869 the western world had so completely lost all touch with him that Mr. James Gordon Bennett, Jr., of The New York *Herald* dispatched Henry M. Stanley to find Livingstone dead or alive. After two years Stanley came upon the great explorer at a time when his hardships had reduced him almost to despair. For five years he had had no word from the outside world. Stanley remained with Livingstone for several months but was unable to persuade him to return to England. The problem of the sources of Africa's great rivers—the Nile, the Congo and the Zambesi—was still not solved to his satisfaction. He turned back to this task and pursued it until his death a year later.

The Enemy of the Slave Trade.—During Livingston's extensive travels in Africa he saw more and more of the unspeakable horror of the slave trade as it was carried on by Arabs and native slave dealers under the encouragement of Portuguese officials. He had repeatedly come upon long lines of slaves fastened one to another with heavy slave sticks. He had seen the ashes of scores of villages which raiders had destroyed and on one occasion he had witnessed the massacre of hundreds of helpless villagers. The trails along which the slave caravans were driven were strewn with corpses of those who had been killed either because they attempted to escape or were unable to keep the pace of the march.

Upon his visits to England Livingstone sought to arouse the public against the nefarious business. In lectures and in writings he exposed the awful scandal. He did all in his power to dissuade the African chieftains from making slave raids upon neighboring tribes and to fight the slave trader. The latter opposed him at every turn, plundering his stores, stealing his medicine and inciting his carriers to desert him. These enemies formed a conspiracy to drive him out of the country or to compass his death. But with courage unshaken he continued to work for the opening of the country to Christianity and to lawful commerce. To him more than to any other man belongs the credit for bringing the African slave trade to an end. The passion of his heart is revealed in the words written to the New York *Herald*: "All I can say in my solitude is, may Heaven's rich blessing come down on everyone—American, Englishman, Turk—who will help to heal the open sore of the world."

As explorer and enemy of the slave trade Livingstone never lost sight of his mission of healing. Frequently he was without the medicines of civilization, as such supplies as were sent to him were often plundered, but along his paths through the jungle were many who had reason to be grateful for his medical skill. Even the Arabs who hated him because of his opposition to their slave trade called him "The Very Great Doctor."

On the first day of May, 1873, his faithful servant found him beside his couch in the attitude of prayer, his head in his hands, dead. His faithful followers removed his heart and other viscera and buried them in a tin box under the tree beneath which he had died. His body, which had been reduced by fever to little more than skin and bone, was then dried in the sun for fourteen days. With unfailing devotion, his black men carried his body a thousand miles to the coast, whence it was returned to England. An oblique fracture of the upper arm bone and the false joint that had resulted amply identified the remains as those of the man whose shoulder the lion had crushed so many years before.

The inscription upon his grave in Westminster Abbey is in part as follows:

Brought by faithful hands
Over land and sea,
Here Rests
DAVID LIVINGSTONE

Missionary, Traveller, Philanthropist.
Born March 19th, 1813.
At Blantyre, Lanarkshire.
Died May 4th, 1873,
At Chitambo's Village, Ilala.
For thirty years his life was spent in an
unwearied effort to evangelize the native races,
To explore the undiscovered secrets,
And abolish the desolating slave trade of
Central Africa.

SURGICAL OBSERVATIONS

A Column Conducted by
THE STAFF OF THE DAVIS HOSPITAL
Statesville, N. C.

TRAUMA AS A CAUSATIVE FACTOR IN CANCER

THERE is a question as to what influence a single traumatic injury has upon the production of cancer in the human body.

As is well known, chronic irritation of a part of the body, such as the irritation of the lower lip from a pipe, may be one of the causative factors of cancer of the lip. Another example is chimney-sweeps' cancer.

The question as to whether or not a single traumatic injury, such as a blow on the finger or arm, or the fracture of the bone, may cause the development of cancer at the site of injury has, in some instances, been a question for courts to decide.

It is the writer's opinion, in the light of our present knowledge, that a single traumatic injury is not a factor in the production of cancer. Now and then a malignant growth may appear where traumatism has occurred, but more than likely the growth was due to a 'rest,' or probably a malignant growth was underway and the trauma only drew attention to it.

Malignant growths may develop at the site of any trauma, but an enormous number of traumatic injuries occur every day, and the few cancers which develop in these traumatic areas, would cause us to doubt that a single trauma can initiate a cancerous growth.

In deciding upon the cause of cancer in any individual, many factors must be taken into consideration. Certain types of growths may be hereditary. In mice, certain forms of malignant growths are frequent and mice have been so selectively bred that cancer occurs in a large percentage of all mice in certain groups; and by breeding of cancer-resistant mice, it has been demonstrated that in this group only a very small number develop cancer. These facts are apparently indisputable. One peculiar fact brought out by these tests is that the newborn of the group of mice in which cancer predominates, suckled by cancer-resistant mothers, will apparently develop a great deal of immunity to cancer and very few of these mice will develop malignant growths. Evidently there is something in the milk or environment which inhibits the growth of cancer in these young mice. This is a very insignificant fact. In the human race, we sometimes find a series of cancers in one immediate family and occasionally we find a history of cancer cropping out in one or more persons in several generations. These facts also suggest the probability of hereditary influence in human beings. However, heredity is not the dominating factor in the vast majority of cancers in the human beings.

The medico-legal question of a single traumatic injury being responsible for cancer is one that has arisen in other states and doubtless will in North Carolina. Summing up our present knowledge on this subject, it is the writer's opinion that a single trauma does not produce cancer.

THE USE OF RADIUM, X-RAY, CAUTERY AND ENDOTHERM IN THE TREATMENT OF CANCER

THE most frequent form of cancer of the uterus is carcinoma of the cervix uteri. Often we see these far advanced, apparently beyond the hope of a cure. These cases always present a tragedy for patients, patients' families and the doctros. The doctors who see these cases regret they were unable to see the patients long before when there was hope of a cure.

A thing that has impressed me greatly about these patients is that now and then a case, which was apparently hopeless, has been cured. I have in mind several patients who have come to the clinic here with apparently no hope of a cure, but treatment was undertaken with the idea of prolonging life and making the patients more comfortable. Some of these patients are well after more than five years. It has been twelve years since one case was treated and the patient is still living.

Treatment in these cases was, first, removal of all the growth possible with endotherm; second, carefully cauterizing the base with an electric cautery, and, third, giving deep x-ray therapy and radium. Later, further endotherm treatment and cauterization was done, followed by a heavy series of deep x-ray treatments. In some of these cases the local area healed completely. No recurrence appeared. Several cases of this kind, where the carcinoma had extended even beyond the cervix and involved the margin of the vaginal wall, are well after five years. These cases were apparently hopeless of cure, and we have been greatly encouraged by their recovery. Any number of recoveries certainly makes the treatment worth while.

We feel that a combination of surgical treatment, endotherm cutting and cautery, together with deep x-ray and radium therapy, will give the best percentage of cures in these cases. Ordinarily, I do not believe we should depend upon any one method of treatment, but should use everything that will possibly contribute to cure.

We have been using the pure radium salt, which gives a constant radiation and we have found this superior to the radium emanation. Frequent ob-

(Concluded on P. 521)

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior
JAMES K. HALL, M.D. ..... Richmond, Va.

Eye, Ear, Nose and Throat
EYE, EAR AND THROAT HOSPITAL GROUP ..... Charlotte, N. C.

Orthopedic Surgery
O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. ..... Charlotte, N. C.

Dentistry
J. H. GUION, D. D. S. ..... Charlotte, N. C.

Urology
HAMILTON W. McKAY, M.D.
ROBERT W. McKAY, M.D. ..... Charlotte, N. C.

Internal Medicine
GEORGE R. WILKINSON, M. D. ..... Greenville, S. C.

Surgery
GEO. H. BUNCH, M.D. ..... Columbia, S. C.

Obstetrics
HENRY J. LANGSTON, M.D. ..... Danville, Va.
IVAN M. PROCTER, M.D. ..... Raleigh, N. C.

Gynecology
CHAS. R. ROBINS, M.D. ..... Richmond, Va.
G. CARLYLE COOKE, M.D. ..... Winston-Salem, N. C.

Pediatrics
G. W. KUTSCHER, JR., M.D. ..... Asheville, N. C.

General Practice
J. L. HAMNER, M.D. ..... Mannboro, Va.
W. J. LACKEY, M.D. ..... Fallston, N. C.

Clinical Chemistry and Microscopy
C. C. CARPENTER, M.D.
R. P. MOREHEAD, B.S., M.A., M.D. ..... Wake Forest, N. C.

Hospitals
R. B. DAVIS, M.D. ..... Greensboro, N. C.

Cardiology
CLYDE M. GILMORE, A.B., M.D. ..... Greensboro, N. C.

Public Health
N. THOS. ENNETT, M.D. ..... Greenville, N. C.

Radiology

Therapeutics
J. F. NASH, M.D. ..... Saint Pauls, N. C.

Tuberculosis
P. P. McCAIN, M.D. ..... Sanatorium, N C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

AGAIN: DOCTORS NEED NOT FEAR

ACCORDING to a recent editorial in the *Journal of the A. M. A.*, Philadelphia newspapers say the Philadelphia County Assistance Board pays a skilled foreman bricklayer $1.79, an iron and steel worker $1.65, an ordinary bricklayer $1.62, a marble setter and polisher $1.60, and a plasterer $1.55 an hour. Among those paid $1.51 an hour are the air compressor operator, the dredge operator, the power shovel operator, the pump operator, the roller operator, the architect (registered or certified), the statistician (graduate or certified), the lawyer and the physician.

The long-haired men and short-haired women who are agitating for Socialized Medicine in this country would have us believe that doctors are well paid and otherwise well treated in countries that have Socialized Medicine. The evidence in support of their statements is far from conclusive.

But, however it may be with doctors in England, in France, in Denmark, it is plain that in one great city of these United States—the city whose doctors established the first medical school in the English colonies of the New World and who have maintained the highest standards of medical teaching and service till this very day—the politicians hold doctors in slight esteem.

And this journal has long maintained that the attitude of the Philadelphia politicians is that of politicians in general over the country.

The politician's who run foreign countries are too intelligent to hold the operation of a steam shovel, a pump or a dredge as of value to society or state equal to that of the practice of medicine.

There's a certain amount of comfort, though, in seeing that the politicians who run Philadelphia put the lawyers just as low as they put the doctors. That can be explained by the fact that city politics are not run by lawyers, as are State and National politics. However, the lawyers who give us a government of the people, by the lawyers and for the lawyers may well heed this voice from the ward-heelers of the City of Brotherly Love.

And there are other rumblings disquieting to the lawyers. According to the San Francisco *Examiner, via* the *Illinois Medical Journal,* the lawyers are in danger of being the next group to feel the heavy hand of government competition. Solicitor General Jackson suggests that the Government "may be compelled" to provide free legal services. Sounds like Hitler proclaiming how he was "compelled" to invade Poland.

This journal can not moisten an eye in the lawyers' cause. We noted this news item for quite a different reason. It's a good deal of satisfaction

to see one's prophesies coming to pass. A number of our editorials have said, and we said in the meeting of the Section on General Practice of Medicine and Surgery of the State Medical Society in 1938, no Legislature or Congress made up mostly of lawyers is going to pass a law to do away with the private practice of medicine on a free basis. Why this confidence? Easy. Because ministers, doctors and lawyers are thought of together as making up the three learned professions; because lawyer-legislators know that if they do away with the private practice of medicine on a fee basis. do away with the private practice of law, that lawyer-legislators will not be able to get fat legal fees while they are drawing their $10,000 a year plus rich perquisites, and will have no soft-snap private practice of law to fall back on when the people tire of sending them to the Legislature or the Congress. And what would become of their sons?

No. No. The average lawyer we send to Raleigh or Washington is far from being the Solon he is facetiously, not to say sarcastically, called; but he's not stupid enough to fail to see that to destroy the private practice of medicine would, likewise, destroy the private practice of law; and that would not work "the greatest good for the greatest number," but would just ruin *his* greatest number, *to wit*, Number One.

He is neither so blind nor so heroic as old Sampson.

The Coming Meeting of the Southern Medical Association

Memphis, November 21st-24th

This year's meeting will be presided over by the scholarly Dr. Walter E. Vest, of Huntington, W. Va. His Presidential Address and his direction of the proceedings may be counted on as exceptional features. The program is one to attract those doctors who take their medical meetings seriously and attend for what may be learned that will be helpful when they get back home. The developments of the plan to have commercial exhibits de-commercialized we will watch with interest.

Among the councillors of the association for 1938-1939 are Dr. William Thornwall Davis, Washington; Dr. Hamilton W. McKay, Charlotte; and Dr. Vincent W. Archer, Charlottesville. Dr. Fred M. Hodges, Richmond; and Dr. J. W. Jervey, Greenville, are Members of the Board of Trustees. Dr. J. R. Allison, Columbia is chairman of the Section on Dermatology; Dr. W. N. Coppridge, Durham, Chairman of the Section on Urology; and Dr. James W. Davis, Statesville, Chairman of the Section on Railway Surgery.

The Southern Medical Association meets nearer by this year than usual. That fact and the prospect of an even better than usual meeting should insure a large attendance from this section.

Migraine

(W. C. Alvarez, Rochester, Minn. in *Wis. M. J.*, June, 1939.)

Migraine is a hereditary disease with its point of origin in the brain or in the nerves regulating the blood supply of the brain. It is seldom helpful to examine the patient extensively and expensively. In migraine a 'storm' of some kind seems to go down the vagus nerves to a normal digestive tract. Disease in the liver does not cause migraine.

The explosion in the brain can be set off in some cases by the eating of certain foods, in others emotion, fatigue, loss of sleep, worry, excitement, and, in women, menstruation.

In some cases the physician cannot help the situation unless he can get the patient to rest, go on a vacation, get easier work, develop better habits of mental hygiene, get rid of annoyances, or solve some economic or sexual problem.

The Treatment of an Attack—The one great achievement in the treatment is the proper use of ergotamine tartrate, or Gynergen, for the aborting of the attacks. It works well in 8 out of 10 cases. The drug comes in ampules containing 0.5 or 1 c.c. of solution, representing 0.25 and 0.5 mg. respectively of the drug. The smaller dose is usually sufficient to bring relief in an hour or two. The drug should be injected hypodermically as soon as . . . . . a typical headache is on the way.

I have been prescribing Gynergen for several years now, and I have seen only one case in which it seemed advisable to stop it because of symptoms suggesting spasm in the vessels of the legs. In this case the patient was an almost insane woman with an extremely unstable autonomic nervous system.

In those cases in which the patient can suspect the night before that a headache will probably come in the morning, it may help to take a dose of castor oil or a saline laxative. When a warning comes an hour or two before the attack, the patient may ward off trouble by taking a double or triple dose of some powder containing acetylsalicylic acid, sodium salicylate, antipyrin or acetanilid, perhaps with caffein or bromides or some barbiturate. To go to bed in a darkened room is a great help, and some persons can get help from putting the head under a cold shower. It is said that two cups of black coffee taken quickly will sometimes abort an attack.

Occasionally one can abort an attack by dissolving from two to six 1 mg. tablets of Gynergen under the tongue, but the use of the drug in this way is not to be recommended unless the patient regularly gets relief from it. If usually in the end he is forced to take the drug hypodermically, he should begin by taking it this way.

Sometimes patients are frightened and upset by the by-effects of Gynergen; and they may start vomiting. The vomiting center can be quieted with barbiturates given preferably in the form of suppositories or intramuscular injections. Often, then, the patient will sleep off the attack.

Once nausea and vomiting have begun, it is useless to put any medicine into the stomach. Even if it stayed down it wouldn't be absorbed.

Odontoid Process Fractures have poor healing qualities.

BOOKS

PRACTICAL OBSTETRICS, by P. Brooke Bland, M. D., Emeritus Professor of Obstetrics, Jefferson Medical College. Consulting Obstetrician, Jefferson Medical College Hospital, Philadelphia; and Thaddeus L. Montgomery, M. D., Clinical Professor of Obstetrics, Jefferson Medical College. Third revised edition, illustrated with 502 engravings including 27 colored plates. *F. A. Davis Company*, Philadelphia. 1939. $8.00.

The authors have revised this edition in many ways, and all for the better. Their claim for it, that it sets forth fact rather than theory, is well borne out. It is a book of few words, as is: it could well have been made a book of fewer words by leaving out a description of the anatomy of the structures of particular concern to the obstetrician. The additions to the knowledge of anatomy in the past 50 years have been too few to justify the inclusion in textbooks of clinical medicine and surgery of sections on the anatomy of the parts.

The presentation of the different tests of pregnancy is excellent, to-the-point. The differential diagnosis tables, the differentiation of a first from any subsequent pregnancy, the determination of life or death of the fetus are practical problems handled in a practical way.

The statement that labor may take place several days before the calculated time or three weeks afterward gives the average doctor authoritative backing for his inability to predict the exact day of labor.

Prenatal supervision, clinical record, antenatal instruction, the toxemias of pregnancy, complications, interruption, normal and abnormal labor and the puerperium are all dealt with realistically and rationally.

One does not have here to thresh a bushel of chaff to get a quart of grain. The doctor who wants to know the latest and best on how to conduct his obstetrical practice, and where to find it in fewer words, should invest in this book.

DISEASES OF THE FOOT: By Emil D. W. Hauser, M. S., M. D., Assistant Professor of Bone and Joint Surgery, Northwestern University Medical School; Attending Orthopedic Surgeon, Passavant Memorial Hospital, Chicago. With a Foreword by Sumner L. Koch, M. D. 472 pages with 263 illustrations on 172 figures, some in colors. *W. B. Saunders Company*, Philadelphia and London: 1939. Cloth, $6.00 net.

The broad-gauge attitude of the author is shown by the opening sentence: "Probably there is no one who is interested in the teaching of medical students who does not feel his particular specialty has not received the consideration it deserves from those who plan the curriculum."

The author regards turning to the chiropodist for relief as a natural result of Medicine's neglect of the foot.

The frequent occurrence of foot symptoms makes this member of great importance to the general practitioner.

The book is based on more than 2000 cases seen in private practice.

How to place the blame for symptoms and what to do about their relief and removal of their cause are the practical desiderata.

Some time ago this reviewer considered purchasing a textbook studied by chiropodists. Dr. Hauser's book is welcomed as a solution of our foot problems.

NUTRITION AND DIET IN HEALTH AND DISEASE: By James S. McLester, M. D., Professor of Medicine, University of Alabama, Birmingham, Alabama. Third Edition, Entirely Rewritten. 838 pages. *W. B. Saunders Company*, Philadelphia and London. 1939. Cloth, $8.00.

Part I treats of utilization of foods—proteins, the vitamins, minerals, water and certain lesser nutritional factors, milk and milk products, meat, fish, eggs, grains, leaves, sugars, roots, fruits, nuts, condiments and beverages. Another section is de-

Anal-Sed

Analgesic, Sedative and Antipyretic

Affords relief in migraine, headache, sciatica and neuralgia. Rheumatic symptoms are frequently relieved by a few doses.

Description

Contains 3½ grains of Amidopyrine, ½ grain of Caffeine Hydrobromide and 15 grains of Potassium Bromide to the teaspoonful.

Dosage

The usual dose ranges from one to two teaspoonfuls in a little water

How Supplied

In pints and gallons to physicians and druggists

•

Burwell & Dunn Company

Manufacturing Pharmacists
Established in 1887

CHARLOTTE, N. C.

Sample sent to any physician in the U.S. on request

voted to diet in the healthy of all ages.

Part II considers nutrition in disease, general and special. Dietary considerations in what are called deficiency diseases, in diabetes, in gout, in the fat and the lean, in kidney diseases, in diseases of the digestive, the articular, the cutaneous and every other system are elaborately discussed. The subclinical nutritive deficiencies are emphasized. Food poisoning and allergy are given a chapter. Trichinosis, we are told, in much more prevalent that most of us are aware. The patient with typhoid should be given a liberal amount of protein, a total caloric intake 50 to 100% in excess of the requirement in health.

A variety of diets are prescribed to meet various febrile and other diseases.

Over many years the author has devoted close attention to problems of nutrition, and this book attests the fruitfulness of his labors in this field.

THE HEALTH INSURANCE DOCTOR: His Role in Great Britain, Denmark and France, by BARBARA N. ARMSTRONG. *Princeton Univeristy Press,* Princeton, New Jersey. 1939. $3.00.

The author tells us that the controversy regarding health insurance (itself a misnomer) tends to center about the doctor. Did the lady think it would center about the politician-administrator, and he not appointed yet? Summaries of the health insurance schemes in effect in England, France and Denmark are given.

If there is any statement of the cost of administration it escaped notice. The same applies to explanation of why it is that mortality records are not as good in either of the three countries as in the United States.

The book's evidence is all in favor of Medicine by the month. The question it does not answer is this: why is it that none of these countries with what are represented to be better systems of meeting health needs than we have has as low a disease or death rate as we have?

ESSENTIALS OF MEDICAL ELECTRICITY, by ELKIN P. CUMBERBATCH, M.A., B.M., (Oxon.), D.M. R.E. (Camb.), F.R.C.P., Medical Officer in Charge, Electrical Department, and Lecturer of Medical Electricity, St. Bartholomew's Hospital. Eighth edition, revised and enlarged with 15 plates and 147 illustrations. The *Sherwood Press,* Edgewater Branch P. O., Cleveland, Ohio. 1939. $5.00. net.

The increased use of the short-wave method is one reason for the new edition. The author regards its biologic effects as wholly due to the action of heat. The mode of action of electricity in the treatment of disease has been to a great extent cleared up. Production of electrical stimuli, production of heat by electric currents, and of chemical and thermal effects are only a few of the means of action.

Some chapter heads are: the different currents used in medicine, their properties and uses; sources of electrical supply; risk associated with the use of currents, and its prevention; the body as a conductor; the galvanic current in therapeutics; surgical electrolysis and ionization; galvanic acupuncture; low-voltage currents; the sinusoidal alternating current; reaction testing; electrical treatment of paralysis; high-frequency currents; diathermy; high-frequency effluve; diathermic coagulation; fulguration; electrosection; and uses of static machine currents.

In an index, electrical treatment of a hundred or more disease conditions—from acne, amenorrhea, anal tissure, angina pectoris and anterior poliomyelitis through the alphabet to urinary incontinence, vernal conjunctivitis, warts, writer's cramp and xanthelasma—is prescribed and described.

Much of the scepticism as to the usefulness of electricity in the treatment of disease conditions has its origin in over-enthusiasm for the agent. This book makes modest claims and is well worthy of study.

THE DIGESTIVE TRACT: A Radiological Study of its Anatomy, Physiology and Pathology, by ALFRED E. BARCLAY, O.B.E., M.D., (Cantab.), D.M., R.&E. (Camb.), M.R.C.P., F.A.C.R., Honorary Radiologist to the Nuffield Institute for Medical Research, Oxford; formerly Lecturer in Medical Radiology, University of Cambridge, Hon. Medical Officer in charge of the X-ray Department, Manchester Royal Infirmary, and Lecturer in Clinical Radiology, University of Manchester. Sometime President, British Institute of Radiology; Electro-Therapeutic Section, Royal Society of Medicine; Roentgen Society; and Electro-Therapeutic Section, British Medical Association. Second edition. *University Press,* Cambridge. 1936. $12.00.

Radio-diagnosis, we are neatly told, is not a new branch of medicine, but a new outlook on medical problems. Only by following a well-tested routine can the radiologist escape the snares set for him. Bias and prejudgment are grave dangers to accurate diagnosis. Sufficiently extensive examination is essential, following a sufficient history. Technique of examining and reporting is minutely gone into and a page of "Dont's" and "Do's" included.

Risks to operators and patients are called to mind and means of obviating described. There are appendices on the organisation and equipment of an x-ray department, secondary rays, the effects of posture on the blood supply to the abdomen, international recommendations for x-ray and radium protection, legal ownership of films and the photographic method of estimating exposure to x-rays.

It is a complete and authoritative covering of this important subject, the wealth of pictorial illustration supplementing the lucid text to make a work of rare excellence.

PRIMER OF ALLERGY: A guide book for those who must find their way through the mazes of this strange and tantalizing state, by WARREN T. VAUGHAN, M.D., Richmond, Va., with illustrations by JOHN P. TILLERY. The *C. V. Mosby Company*, St. Louis. 1939. $1.50.

The booklet is plainly yet attractively written. Most readers will enjoy it, chuckle over it, and derive from it a lot of information helpful toward, by coöperation with the doctor, living happily with and in despite of their allergies.

DR. COLWELL'S DAILY LOG FOR PHYSICIANS: A Brief, Simple, Accurate Financial Record for the Physician's Desk. The *Crowell Publishing Company*, Champaign, Ill. 1940 edition. The Standard Log. $6.00; The Double Log (2 vols.) $11.00.

This provision for and encouragement to accurate bookkeeping for and by doctors is all that the makers claim for it. It makes it easy for accounts to be kept accurately and up to the minute. It provides means by which income-tax reports may be made out in a few minutes, with no uneasiness as to either having paid too much or having incurred a penalty. Provision for an obstetrical waiting list, notifiable diseases, inoculations and record of deaths does away with many worries and saves a lot of time.

The Log provides the readiest means we know of saving time and money for the doctor.

THE JOURNAL OF ENDOCRINOLOGY: Edited by E. C. DODDS, published by *Oxford University Press*, Amen House, Warwick Square, London. Subscription, 10 s. net. may be sent to 114 Fifth Avenue, N. Y.

Number 1 of volume 1, June, has come to hand, considerably delayed. At present one volume is published each year. The current volume carries eleven articles on various researches in endocrinology. This research periodical will be accorded the welcome on this side that its high order merits.

DAVIS HOSPITAL NOTES
(*From P.* 510)

servation of the patient and treatment by cautery or endotherm of any little growth or recurrence about the cervix when it first appears is also a helpful procedure.

X-ray given by the Coutard technique seems to be very satisfactory, the theory being that the treatment given daily will kill certain cells, that new growths will be killed from time to time, and that the daily radiation, over a period of time, will do more toward destroying the cancer cells than any other technique for deep x-ray therapy.

THE CURABILITY OF CANCER

THE majority of cancers of the human body can be cured by surgical excision, if the diagnosis is made early. As everyone knows, the longer a cancer persists the more likelihood of a recurrence, the earlier the removal, the less likelihood of a recurrence.

If the diagnosis of cancer is made before the cells have migrated to other parts of the body, simple surgical excision will produce a cure. If there are no cancer cells left, there will be no recurrence. This fact should be kept in mind in the examination of every patient suspected of even the possibility of a cancer.

NEWS

ANNUAL MEETING NINTH (N. C.) DISTRICT MEDICAL SOCIETY

The meeting of this, many say the best, District Medical Society was held at Morganton, the afternoon and evening of September 28th. At 2:00 p.m. the meeting came to order at the call of Dr. J. R. Terry, Lexington, Councillor. Invocation was pronounced by the Rev. Mr. Wa Aa Newell, Pastor First Methodist Church, and an address of welcome delivered by Miss Beatrice Cobb, Editor of *News-Herald*, Morganton, Dr. H. H. Newman, Salisbury, responding.

Dr. J. W. Vernon, Morganton, memorialized Dr. E. W. Phifer, well loved Morganton surgeon, who has died in the year since the last meeting.

Papers: 1. Metrazol in the Treatment of Mental Disease —Dr. R. H. Long, Morganton. 2. The Treatment of Fractures of the Hip Joint—Dr. J. W. Davis, Statesville. 3. Surgical Treatment of Tuberculosis—Dr. S. M. Bittinger, Black Mountain. 4. The Rationale of the Treatment of Goiter—Dr. T. D. Sparrow, Charlotte. 5. Problems of Late Toxemia of Pregnancy in North Carolina—Dr. R. A. Ross, Durham.

Dinner was served at 6:30, toastmaster—Dr. J. B. Riddle, Morganton, at which Dr. Jas. K. Hall, of Richmond, addressed the assemblage on: *What Moves Man.*

DR. GUION PRESIDENT

The nineteenth annual meeting of the Second District (N. C.) Dental Society Oct. 9th and 10 th, chose Dr. J. H. Guion of Charlotte, president; Dr. Amos Bumgardner of Charlotte, president-elect; Dr. W. A. Ingram of Monroe, vice-president; Dr. Carl Barkley of Winston-Salem, secretary-treasurer; and Dr. R. W. Crews of Thomasville, member of the executive committee.

A clinic conducted by Dr. L. G. McGinnis of Birmingham; a lecture by Dr. Clarence O. Simpson of St. Louis, on The Essentials of Radiodontic Service and a series of table clinics conducted by dentists from various parts of the district were prominent features of the meeting.

DR. AUBREY HAWES announces the opening of offices in the Medical Arts Building, Charlotte, N. C. for practice limited to Urology and Genito-Urinary Surgery.

DR. PHILIP NAUMOFF announces the opening of offices for the General Practice of Medicine at 706 Independence Building, Charlotte.

CATAWBA VALLEY MEDICAL SOCIETY.—September 12th. 2 p. m., Grace Hospital, Morganton.

A Comparison of Sulfanilamide, Sulfapyridine and Sulfanilyl-Sulfanilamide, by Dr. Walter Eugene Daniel, Charlotte.

A Case of Myasthenia Gravis, by Dr. Kenneth Lee Cloninger, Conover.

Recent Advances in the Diagnosis and Management of Cardiovascular Diseases, by Dr. Joseph Samuel Holbrook, Statesville.

L. A. CROWELL, JR., M. D., Secy.

SOUTHWEST VIRGINIA MEDICAL SOCIETY—Dr. C. F. Manges, Blacksburg was elected president at its annual meeting September 20th, succeeding Dr. Harry W. Bachman, Bristol. Dr. T. K. McKee, Saltville, vice-president, and (re-elected) Dr. James P. King of Radford, secretary-treasurer. A round table discussion on heart and kidney diseases was led by Dr. J. Edwin Wood, Jr., Professor of Medicine at the University of Virginia.

Dr. Arthur M. Shipley of Baltimore and Holman Willis, Roanoke attorney, were speakers at a banquet in the evening. Seventy-five doctors in this section of the State were present.

DR. T. B. WASHINGTON, Richmond, announces the removal of his offices September 1st, to Berkeley Building, 923 W. Franklin Street.

DR. ARTHUR LONDON, Durham, was elected president of the Sixth District Medical Society at a meeting at Durham, Sept. 21st. DR. S. C. SPOON, Burlington, was elected vice president, and DR. OSCAR GOODWIN, Apex, was re-elected secretary-treasurer.

DR. ERNEST H. GRUENING, recently appointed Governor of Alaska by President Roosevelt, is a graduate of the Harvard Medical School. For several years he has been chief of a division in the Department of the Interior.

DR. WILLIAM H. PATTON, JR., has returned to his home at Morganton, N. C., after spending the summer at Ridgecrest as physician at the Southern Baptist Assembly center and opened an office to begin the general practice of medicine.

DR. D. H. ROSENFELD, announces the opening of offices for the practice of internal medicine and gastro-enterology at 1028 W. Franklin Street, Richmond, Va.

MARRIED

Dr. William Morgan Fox, of Columbia, South Carolina, and Miss Peggy Sugg Williams, of Raleigh, were married in the Duke Chapel in Durham on September 23rd. Dr. Fox is a member of the medical staff of the State Hospital in Columbia.

Dr. Isaac Emerson Harris, Jr., and Miss Mary Elizabeth Teer, both of Durham, were married on September 16th.

Miss Mary Alice Fittz, of Bracey and Meredithville, and Dr. T. B. Smith, of Bracey, Virginia, were married in Petersburg Saturday, September 2nd. Dr. and Mrs. Smith will make their home in Bracey.

DEATHS

DR. CHARLES STAPLES MANGUM, died September 29th in Watts Hospital, Durham, where he had been undergoing treatment for several months. He was 69 years old on July 14th.

Dr. Mangum had been a member of the faculty of the Medical School of the University of North Carolina for 43 years and served as Dean during a four-year period from 1933 to 1937 when he asked to be relieved of administrative duties.

At the University of North Carolina, where he was graduated with an A. B. degree in 1891 and later studied medicine, Dr. Mangum was voted the best all-round athlete. He starred in track and football and was director of physical education during the two years he studied medicine at Chapel Hill.

Dr. Mangum went from Chapel Hill to Jefferson where he received his M. D. degree in 1894 and was awarded the therapeutics prize. He did graduate work in medicine at the University of Chicago and at Harvard. From 1894 to 1895 he was assistant demonstrator in anatomy at Jefferson. He won the Appleton prize for the best examination presented before the North Carolina board of medical examiners in 1896.

Returning to the University at that time, Dr. Mangum was appointed professor of physiology and materia medica. From 1900 to 1905 he was professor of pharmacology and demonstrator of anatomy and in 1905 he was named professor of anatomy in which capacity he served until his appointment to the deanship in 1933.

Dr. John Bailey, 39, died Sept. 22nd, at his residence in City Point Apartments, Hopewell, Va. A graduate of the Medical College of Virginia, Dr. Bailey had been practicing in Hopewell for about 12 years. He had done post-graduate work in medicine at the University of Pennsylvania.

Dr. Coll H. Sexton, 84, the first physician to establish an office in Dunn and one of the oldest in eastern North Carolina, died August 31st in Good Hope Hospital at Erwin. He had been in ill health following retirement about three years ago, a patient at the hospital for several weeks. Death came after a series of heart attacks.

Dr. James Horace Stimson, Jr., 26, who spent much time as a boy in the home of his grandmother in Greensboro, died December 13th, at Galveston, of burns suffered boro, died September 13th, at Galveston, of burns suffered Sept. 4th, in a gasoline explosion on a pleasure boat.

Dr. Walter J. Adams, 74, a Norfolk practitioner for 40 years until his retirement last year, died Sept. 16th shortly after an operation. During his active practice, he was the physician for a number of shipping companies. His education was received at Gloucester Academy, Baltimore City College and the University of Maryland. He received his medical degree from the Medical College of Virginia in 1895.

Dr. Louis Laval Williams, nationally known sanitarian and retired officer of the United States public health service, died at his home in Asheville, Sept. 17th. Dr. Williams retired in 1924 from the health service. He was a native of Georgetown, S. C., and a former editor of the Department of Public Health of this journal.

Dr. J. L. Rawls, Suffolk, Virginia, member of the Staff of Lakeview Hospital, was killed in an automobile accident September 6th. Dr. Rawls was 54 years old and a graduate of Jefferson in 1917. Dr. J. E. Rawls, of Suffolk, lost his life in an automobile accident October 14th of last year.

OUR MEDICAL SCHOOLS

University of Virginia

A first-year class of sixty-nine students was admitted to the Department of Medicine for the session 1939-40.

The following additions have been made to the Medical Faculty for the session 1939-40: Dr. Eugene M. Landis, Professor of Internal Medicine and Head of the Department; Dr. Samuel A. Vest, Associate Professor of Urology; and Dr. T. S. Englar, Associate Professor of Public Health and Hygiene. Drs. G. B. Arnold, P. N. Williams and James Pettis have been appointed Associates in Neuro-Psychiatry.

Dr. Vincent Archer served as instructor in two courses offered by the American Roetgen Ray Society at a meeting in Chicago from September 19th to 22nd.

Dr. James Edwin Wood led a round-table discussion on the topic of Hypertension, Nephritis and Congestive Heart Failure at the annual fall meeting of the Southwestern Virginia Medical Society in Roanoke, Virginia on September 21st.

Two Neuro-Psychiatric wards with a total of forty-one beds providing modern facilities for diagnostic study and treatment of mental and neurological diseases were opened on October 2nd. This addition has been named the John Staige Davis Neuro-Psychiatric Wards 1 and 2 in honor of a former member of the Medical Faculty. The addition was made possible through the gift of $82,000 from Paul Goodloe McIntire of New York City and a P. W. A. Grant of $68,000.

Duke

A 3-day Symposium on Diseases of the Lungs and Thorax will be held at the School of Medicine and Hospital October 19th-21st with leading authorities from American medical schools, hospitals and clinics participating.

President W. P. Few will deliver the welcoming address on the afternoon of October 19th. Among the visiting speakers will be: Dr. Edward D. Churchill, Harvard; Dr. Frederick T. Lord, Harvard; Dr. Daniel M. Brumfiel, Trudeau Tuberculosis School; Dr. Chester A. Stewart, University of Minnesota; Dr. Harry A. Bray, New York State Hospital for Incipient Tuberculosis; Dr. Cameron Haight, University of Michigan; Dr. William Dew Andrus, Cornell; Dr. Isaac A. Bigger, Medical College of Virginia; Dr. Charles R. Austrian, Johns Hopkins; Dr. Dickinson W. Richards, Jr., Columbia; Dr. William F. Rienhoff, Jr., Johns Hopkins; Dr. Stuart W. Hhrrington, Mayo Clinic; Dr. Maxwell Finland, Harvard; Dr. Daniel C. Elkin, Emory; Dr. Gabriel Tucker, Pennsylvania.

Miss Margaret I. Pinkerton has been appointed Dean of the School of Nursing and will commence her duties about October 1st. Miss Pinkerton was graduated from the University of Virginia School of Nursing in 1927 and received her Bachelor of Science degree in Nursing from Teachers College, Columbia University, in 1933. She was Assistant Superintendent of Nurses at the Stuart Circle Hospital in Richmond, Va., for two years; Assistant Superintendent of Nurses at the University of Virginia for five years; Instructor in Nursing Arts at Washington University School of Nursing, St. Louis, for one year, and has been Superintendent of Nurses at the Barnes Hospital, St. Louis, since 1938.

Of the 316 graduates of the Duke University School of Medicine, from the first class of 1932 through 1939, 204 are still engaged in interneships at various hospitals, and 112 are in practice. Of the latter, 34—30%—are in practice in 26 towns in North Carolina, and 36 are in practice in 11 other southern states, making a total of 70—62%—in practice in the South. Seven Duke graduates are in practice in West Virginia, 6 in Virginia, 5 each in South Carolina and Florida, 3 each in Alabama and Texas, 2 each in Georgia and Louisiana, and 1 each in Mississippi, Maryland and Kentucky.

Medical College of Virginia

Convocation exercises opening the 102nd session were held at the old First Baptist Church, September 18th, at 11:30 a.m.

Colonel E. W. Clarke, acting commissioner of public works of the Public Works Administration made the principal address. Colonel Clarke was introduced by Honorable James H. Price, Governor of Virginia, who spoke briefly on the place of the college and the new hospital in service to the State. Mr. H. A. Wortham, Regional Director of the Public Works Administration, Atlanta, made a brief talk, as did Mr. George E. Snider, President of the student body organization of the college. President Sanger presided at the exercises. Following the exercises at the church the corner-stone of the new hospital was laid with appropriate ceremonies by the Lewis Ginter Lodge, No. 317, A. F. & A. M.

Dr. J. H. Scherer, Assistant Professor of Medicine, attended the International Conference on Hematology at Madison, Wisconsin, September 4th-6th.

The Public Works Administration has approved a supplemental grant in the amount of $123,056.00 for hospital construction. The total cost of the building when completed will run over $2,000,000.00.

Dr. Sumter S. Arnim has been appointed Assistant Professor of Operative Dentistry.

Dr. David S. Garner, Assistant Superintendent of the Hospital Division, has resigned to accept the position of Assistant Medical Director of the Shenandoah Life Insurance Company, Roanoke.

Mr. Byron E. Leach has been appointed research assistant in the department of biochemistry. Mr. Leach received his master's degree from the Virginia Polytechnic Institute last June.

The Richmond Chapter of the American Red Cross has made a grant of $700.00 towards a weekly clinic for veneral disease control for a period of seven months.

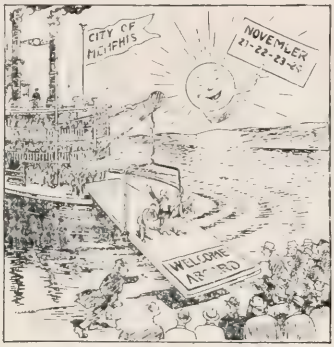
One friend makes a remark about the other's downcast mood.

"I've just got a son," said the sad one.

"Well, but isn't that an occasion for joy?" his friend questioned.

"Generally speaking, it is; but it's this way, I've been sterile for ten years and I dread the little fellow growing up and finding he has inherited my affliction."

"An exclusive vegetable diet will make you beautiful," asserts a woman columnist. "Lady, did you ever take a good look at a hippopotamus?"



WELCOME to MEMPHIS to the outstanding medical meeting of the year—the annual meeting of the **Southern Medical Association, November 21-24.** In the nine general clinical sessions, the nineteen sections, the three independent medical societies meeting conjointly and the scientific and technical exhibits, every phase of medicine and surgery will be covered **—the last word in modern, practical, scientific medicine and surgery.** Addresses and papers will be given by distinguished physicians not only from the South but from all over the United States.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Memphis a program to challenge that interest and make it worth-while for him to attend.

ALL MEMBERS of State and County medical societies in the South are cordially invited to attend. And all members of state and county medical societies in the South **should be and can be** members of the Southern Medical Association. The annual dues of $4.00 include the Southern Medical Journal—**the equal of any, better than many.**

SOUTHERN MEDICAL ASSOCIATION
Empire Building
BIRMINGHAM, ALABAMA

ITEMS FROM NATIONAL TUBERCULOSIS ASSOCIATION

Whilst meager Phthisis gives a silent blow
Her Stroaks are sure: but her Advances slow
No loud alarms nor fierce assaults are shown;
She starves the Fortress first, then takes the Town.

From "The Dispensary: A Poem" in Six Cantos, by Samuel Garth, London, 1699.

The deficiency of Vitamin C in tuberculosis may be compensated by administration of a large amount of ascorbic acid. However, it is an error to suppose that administration of vitamin C can have a decided influence in the tuberculous process or make general treatment unnecessary. Vitamin C is a useful adjuvant to hygienic and dietetic therapy and artificial pneumothorax. It is best given intravenously.—Melzer, E., *Deut. Tuber. Blatt,* 1938.

Patch test for children—169 children at Sea View Hospital, Staten Island, New York, were given the Mantoux *intracutaneous* tuberculin test and the tuberculin *patch* test and only one failed to react to the patch test who reacted positively to the Mantoux test. An additional 118 children at Mt. Sinai Hospital, New York, were given the Mantoux test and no case which had not been discovered by the patch test was revealed. The value of the patch test for young children appears to be firmly established and it has the additional advantages that it never provokes a general reaction and never frightens either the children or the parents. Vollmer, H. and Goldberger, E. W., *Amer. Jour. Diseases of Children, Sept.,* 1938.

Simple Adhesives for Convenient Use

Photo-Library Paste

White dextrine	10 oz.
Potato starch	10 oz.
Water	7 pints

Make into a paste with part of the water. Add the rest of the water and heat on a steam bath (or use a double boiler) until a smooth solution results. Stir constantly and add, with continued stirring:

Glycerine	3 oz.
Phenol	30 drops
Formaldehyde	1/8 oz.
Oil of sassafras	10 drops

Strong Mucilage

Gum arabic	2 oz.
Water	32 oz.
Glycerine	2 oz.
Salicylic acid	90 gr.

A light colored mucilage results.

Cabinet Makers' Glue

Glue	175
Glycerine	10
Water	10
Bentanaphthol	½
Terpineol	½

Soak the glue in the water overnight, then heat to not over 150° F., stirring until the glue is dissolved. Dissolve in the other ingredients, with stirring. Pour the mixture into mold and allow to cool and set.

Cellophane Adhesive

Gum arabic	17½ parts
Water	15½ parts
Glycerine	30 parts
Formaldehyde	.05 part

To Stop Leaks in Radiators

To stop leaks in automobile radiators, the following glycerine-containing formulas should prove of value. Both are easy to prepare.

1. Glycerine	1 oz.
Water	5 oz.
Ground flaxseed	½ oz.
2. Glycerine	4 oz.
Alcohol	4 oz.
Oleic acid	2 oz.

Mix the alcohol with the acid, then add glycerine.

Combined Use of Typhoid Vaccine and Neoprontosil in the Treatment of Gonococcal Arthritis

(R. O. Muether and K. R. Andrews, St. Louis, in *Jl. Mo. State Med. Asso.*, Oct.)

Fever therapy in the form of typhoid vaccine intravenously combined with neoprontosil succeeds in reducing hospital stay of patients suffering from gonococcal arthritis about 50%.

Pain was relieved promptly usually within the first 24 hours and when cases were seen early damage to cartilage and impairment of joint function was prevented.

No untoward results were noted from the combined use of the therapeutic agents, neoprontosil tablets and typhoid vaccine.

Surgeons have come to act as if salvation (as to water consumption) could be achieved only intravenously.—*V. E. Simpson* in *Ky. Med. Jl.*

Water—Unless a patient is partially comatose, his own thirst is the best index of the amount of water he needs. If he is partially comatose, the danger of giving too much water should be well considered.

The best preparations of iron for anemia are ferrous carbonate, ferrous chloride, and ferrous sulphate. These are all cheap and efficient.—*Haden.*

The vermiform appendix has been found to vary from 1 to 25 cm. It may be found just below the liver, under the spleen, or in the left lower abdominal quadrant from failure or rotation of the colon.—*H. C. Welcome.*

The diagnosis of appendiceal obstruction, the initial stage of acute appendicitis, can be made without leucocytosis and fever, and treatment then will prevent complications.—*Coller.*

Most of us grown folks welcome *information* properly presented. Few react favorably to the harangues of semi-illiterates bent on "educating" us.

Sterility and Abortion may be due to hypoactivity of the thyroid. Either or both parents may need thyroid.

There are 5 Common Causes of Hematuria—stone, tumor, tuberculosis, infection and nephritis.—*Kretschmer.*

Molasses is a rich and inexpensive source of available iron.—Harris *et at* in *Am. Jl. Dig Dis.*, Sept.

Some claim a reduction of half in mortality from gas gangrene from use of x-rays in the treatment.

Doctor: "Seemingly you must have called me by mistake. I am a specialist of women's diseases."

Patient: "No doctor, there is no mistake. I am sick on account of my wife."

"Temporarily, the sense of hearing is considerably dulled by eating," asserts a physician. Kind Nature does the best she can to protect us from after-dinner speakers.

Specifically, eating soup dulls the hearing. And for protection against the radio salesmen, celery.

INHALANT No. 77

An Ephedrine Compound used as an inhalant and spray, in infections, congested and irritated conditions of the nose and throat. Relieves pain and congestion, preventing infection, and promotes sinus ventilation and drainage without irritation.

Description

Inhalant No. 77 contains Ephedrine, Menthol, and essentials oils in a Paraffin oil.

Application

Can be sprayed or dropped into the nose as directed by the Physician.

Supplied

In 1 ounce, 4 ounce and 16 ounce bottles.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

Join
American Red Cross

READY SOON

A BOOK ON THE CREATION, THE MAINTENANCE AND THE OPERATION OF A SMALL CLINICAL LABORATORY AT SMALL COST.

This book is now on the press.

This book is an answer to the question: How can I arrange to have needed laboratory work done for *all* my patients, and so do the kind of practice I want to do, without making a large outlay, without assuming heavy operating expenses and without heavily burdening my patients?

The author is J. M. Feder, M. D., Pathologist Anderson County Hospital, Anderson S. C. Dr. Feder's wide and diversified experience in this field qualifies him to write on technic and interpretation.

His inventiveness and his skill in improvising are exemplified by the number of small clinical laboratories already created and being operated at small cost, according to his ideas.

CHARLOTTE MEDICAL PRESS,
Charlotte, N. C.

GENERAL

Nalle Clinic Building

THE NALLE CLINIC

412 North Church Street, Charlotte

Telephone—3-2141 (*If no answer, call* 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
Gynecology & Obstetrics.

EDWARD R. HIPP, M.D.
Traumatic Surgery

PRESTON NOWLIN, M.D.
Proctology & Urology

Consulting Staff

DOCTORS LAFFERTY & BAXTER
Radiology

HARVEY P. BARRET, M.D.
Pathology

General Medicine

LUCIUS G. GAGE, M.D.
Diagnosis

LUTHER W. KELLY, M.D.
Cardio-Respiratory Diseases

J. R. ADAMS, M.D.
Diseases of Infants & Children

W. B. MAYER, M. D.
Dermatology & Syphilology

WADE CLINIC

Wade Building
Hot Springs National Park, Arkansas

H. King Wade, M. D.	*Urology*
Charles S. Moss, M.D.	*General Surgery*
J. O. Boydstone, M.D.	*General Medicine*
Jack Ellis, M.D.	*General Medicine*
Frank M. Adams, M.D.	*General Medicine*
N. B. Burch, M.D.	*Eye, Ear, Nose & Throat*
Raymond C. Turk, D.D.S.	*Dental Surgery*
A. W. Scheer	*X-ray Technician*
Etta Wade	*Clinical Pathology*
Mary Alice Phillips	*Clinical Pathology*
Marjorie Wade	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building **Charlotte**

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building **Charlotte**

HERBERT F. MUNT, M.D.
FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS
Nissen Building **Winston-Salem, N. C.**

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., NOVEMBER, 1939 No. 11

The Treatment of Fractures of the Neck of the Femur

James W. Davis, M. D., Statesville, North Carolina
Surgeon-in-Chief Davis Hospital

WITH the rapid increase in the use of machines, especially automobiles, the incidence of fractures of the neck of the femur has increased, perhaps second only to the increase in skull fractures. The majority of cases of fracture of the neck of the femur occur in people past middle age, but may occur even in the young.

A careful study of the details of the surgical anatomy and physiology of the neck of the femur will reveal many things having important bearing on the diagnosis and treatment. The neck of the femur is subjected to tremendous strain, even in the normal activity of the individual. The long shaft of the femur acting as a powerful lever, it can be easily seen that the neck is subjected to great strain in all the movements involving the whole body, or both or one lower extremity. Occupying the position it does, the outer surface must receive the full force of many heavy falls. When sufficient force is applied to the outer surface of the hip, the force is transmitted through the trochanter to the neck of the femur.

Nature has made this a very strong bone, able to withstand the ordinary strains incident to everyday work and activities of the average individual, and even ordinary violence. By a happy arrangement, the period of life in which the bones are subjected to most violence coincides with the period in which bones are toughest.

In the elderly, the neck of the femur, made brittle by absorption of animal tissue and increased lime deposits, breaks easily, most easily where it is smallest, and we have an intracapsular fracture. Very often such a fracture is impacted.

The head and neck of the femur are well supplied with blood vessels. As aging goes on, there are varying degrees of impairment of circulation generally. This impairment is unusually rapid in the head and neck of the femur. In a transverse fracture at the narrow point of the neck—an intracapsular fracture—the head of the bone may be almost without blood supply except that small supply which comes through the round ligamentum teres. Therefore, the hope of good union lies, to a great extent, in the reduction of the fracture and the reëstablishment of a blood supply from the major fragment. The blood supply from the ligamentum teres is, at best, precarious, and if it is interrupted before other supply can be provided, atrophy of the head of the femur is to be expected. Even though this source of blood supply is feeble, it is of great help and usually tides over until circulation from the main part of the bone can be reëstablished. A point of vital importance is that the restoration of this circulation depends to a great extent upon accurately reducing the fracture and *holding the fractured ends in rigid apposition.*

An important phase of this subject which most writers and most textbooks have failed to mention is that, in the aged, a femur, especially its neck, may be injured by a fall when stepping on a slippery paper, on a rug, on a waxed floor, or on the soapy bottom of a bathtub, causing a fracture of the neck of the femur so slight that the most expert x-ray examination will fail to demonstrate a fracture. Yet a partial fracture has been sustained, and, in a short space of time this partial fracture may become complete. Such occurrences have led to unfortunate experiences for the doctor and patient, to say nothing of the unfair criticism of the doctor and the x-ray man, who may be accused of overlooking a fracture which no x-ray examination would disclose. This fact should always be kept in mind in cases where a patient has had a fall and comes for examination. I have known patients having had a severe fall, then an x-ray examination; or have not consulted a doctor at all but went on about their usual work for a period of

*Read before the Ninth (N. C.) District Medical Society, Morganton, September 28th.

time and then suddenly developed an intracapsular fracture of the neck of the femur. X-ray examination made before the complete fracture developed disclosed nothing in the way of an injury due to the fall—at least nothing definite. Of course, where no x-ray examination was made, we could not tell just what the appearance of the bone was. Certainly, however, a week or so after an injury of this kind, fractures have developed in patients who have had no further injury. These cases are vastly important from a medico-legal viewpoint.

Any external violence with force transmitted in the proper direction may produce a fracture of the neck of the femur, or such fracture may result from some extreme muscular action. In the latter case, it would most likely be a fracture of the intertrochanteric type. These, as well as the intracapsular type, present many problems for the surgeon.

Usually when we are called to a case of fracture of the femur, or have one brought in, we find the patient lying with the injured leg slightly flexed and the foot rotated outward. Measurements usually show a shortening of the leg. The leg cannot be moved easily. The patient states he is unable to raise the leg or foot. There is great pain on motion. Motion in the member is lost or limited in every direction. A careful examination will reveal a fullness in the upper part of Scarpa's triangle and the trochanter above Nelaton's line. Crepitus will be discovered, as a rule, if tested, but we do not advise this. An attempt to elicit crepitus holds more promise of evil than of good. We should depend principally upon the local examination, including accurate measurements, general examination and x-ray examination to determine the nature and particulars of the injury.

The problem we usually have presented is that of an aged individual whose heart and circulation are impaired, especially susceptible to pneumonia. The fracture had produced a shock to the nervous system which is often in itself sufficient to cause serious complications. Because many of the patients have been subjected to periods of disease and sickness of various kinds, naturally their mentality often breaks under the shock and pain following a fracture of the femur. Many of these patients' kidneys are able to discharge their function under ordinary conditions, but are unable to meet any extra demand made on them, and so a fatal uremia may develop. The prostate is usually enlarged and retention of urine may occur when bedridden. This requires catheterization which may seriously complicate the situation by causing a secondary infection. Every fractured femur presents many problems. In many cases a slight aggravation of any one of several conditions present may cause the patient's death. For this reason, fractures of the hip have been the terror of the aged. A life of invalidism in a wheel chair, or in bed, is a gloomy outlook.

The treatment has varied from traction, with the leg in abduction and held in position in great pain, to the Whitman method of treatment, in which the leg was held in abduction and a plaster splint applied. Various other methods of holding the leg in the proper position have been in common use and have been more or less successful.

Unfortunately, in some cases, it has been obviously impossible to use any treatment whatever because the patient was too feeble to stand any treatment, and in some of these cases it has been necessary to just keep the patient in bed in a comfortable position and try to support the failing circulation, and forestall an impending pneumonia or a beginning uremia as best we could. It is in this type of case, of course, that the mortality is extremely high.

For the past several years our method of choice in these fractures has been the use of internal fixation by means of metal pins. At the present time we are using the Smith-Petersen nail, and increasing experience has given us better and better results. We are now managing these cases very satisfactorily and obtaining results gratifying to patient and doctor. Thinking back on the management and results before the development of this form of internal fixation makes us realize what a blessing it is.

Internal fixation by a number of metal pins is successfully used by Austin Moore. He has obtained excellent results with this type of treatment. We have used it also in certain types of fractures and found it exceedingly satisfactory.

For the past three years, however, almost all fractures of the neck of the femur, in which treatment was possible, have been treated with the Smith-Petersen nail. This has many advantages. Only one nail is used. It can be placed in position in a few minutes, with little or no shock to the patient, and may be left in for long periods of time—even indefinitely. Some have advised leaving the pin in permanently. This holds the fractured ends in firm apposition and permits the most rapid regeneration of blood vessels and the firmest union of any method at our command. It permits the patient to lie in bed in almost any position and move about easily and freely without pain. A plaster splint is not necessary—and dread of confinement in a plaster cast is general and well-founded. It permits the patient to be up in a chair forty-eight hours after reduction of the frac-

1. A typical intracapsular fracture of the neck of the femur.

3. Transverse view of neck of femur with guide pin in place.

2. A fracture of the neck of the femur which has been reduced. Guide pin inserted with the fracture in good position.

4. Smith-Petersen nail inserted in good position. Fracture held in good position. Practically perfect reduction.

5. Transverse view of neck of femur with Smith-Petersen nail in practically perfect position.

6. Intratrochanteric fracture of the neck of the femur before reduction. This is the type which a Smith-Petersen nail will not hold in the proper position unless other means of fixation are used. In this case, an additional internal metal splint was applied to hold the neck of the femur at an angle of 127°. The x-ray picture shows a good reduction and good position of the fragments.

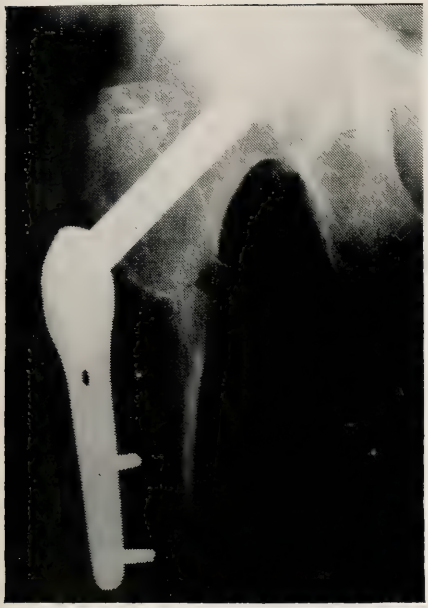
ture—and this is a big factor in the tremendous drop in mortality and rise in the percentage of good unions.

Where the trochanter is involved, and a Smith-Petersen nail cannot keep the fracture in position and neck of the femur at the proper angle with the shaft, we have available a contrivance which can be attached to the end of the Smith-Petersen nail with a heavy screw, pulled down on the outer surface of the femur and fastened below, thus keeping the neck at the proper angle with the shaft—ordinarily about 127 degrees. Here again we have internal fixation which relieves us of the necessity of a great deal of external fixation by plaster, etc.

At times plaster is necessary, especially to keep the foot from rotating outward; but, as a general rule, when plaster is required it is only to the foot and ankle and is intended to keep the foot rotated inward and take some strain off the fractured area.

The original Smith-Petersen nails were made of rustless steel and we have found these extremely satisfactory. In no case have we been forced to remove a nail because of infection, although we have removed some after a few months, it has been more a general idea that foreign bodies should not be left in, than from any evidence that any harm was being done, or would be done, by their being left in place. Although we have been accustomed to removing them, in most cases, after four to eight months, I believe it is all right to leave these nails in permanently. Now that Smith-Petersen nails can be made from Vitallium metal, I am even more convinced that we can safely leave them in.

The operation of inserting and securing the Smith-Petersen nail requires familiarity with the technique and the very best operating room organization and x-ray equipment. Reduction must be accurately accomplished before the guide-pin is inserted and then a Smith-Petersen nail should be selected of proper length to penetrate the head of the femur one-fourth to one-third of an inch and have the outer end almost flush with the outer surface of the trochanter. A nail or pin for use as a guide is first inserted, under x-ray and fluoroscopic control, and is carefully checked by x-ray



7. This is the fracture shown in illustration No. 6. The fracture has been reduced, a Smith-Petersen nail inserted and an additional internal metal fixation splint was fastened to the Smith-Petersen nail by means of a screw above and two screws below to hold the shaft of the femur at the proper angle to the neck until healing could take place.

8. This is the same case as shown in illustrations No. 6 and No. 7. Transverse view of neck of femur after Smith-Petersen nail and additional splint applied.

examination in anteroposterior and transverse positions. The Smith-Petersen nail is threaded on the guide and, under fluoroscopic control, is driven in proper position while the bones are held so that the fragments are in proper apposition. The incision on the outer side is closed and a dressing applied. As a rule, no other splinting is necessary.

A two-plane direction and range finder which was devised by Engel and May is very useful and quite practical. It facilitates the accurate introduction of the Smith-Petersen nail and is of great usefulness in determining the length of the nail which should be used.

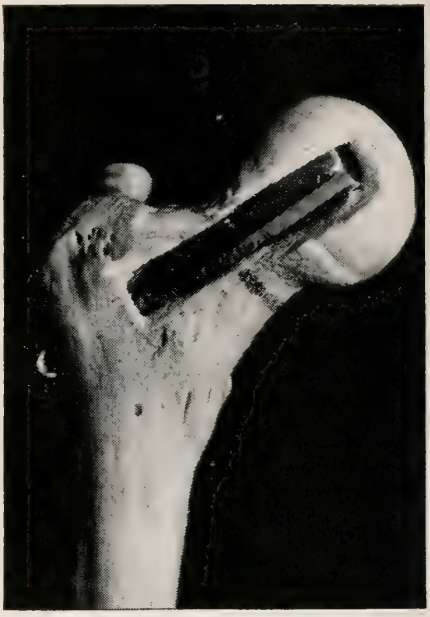
Successfully performed, this operation gives absolutely fixed apposition, thus affording best opportunity for restoration of blood supply and rapid healing. The patients can move about in bed, sit up in a day or so, or can be placed in a wheel chair and moved about. During the period of healing, the fracture is protected from motion by means of this flanged nail. It permits the patient to be up and around on crutches, and later on to walk, using the injured leg.

Post-operative complications are reduced enormously. The mortality is greatly lowered and the percentage of good results has increased to the point where we can now treat most fractures of the hip with reasonable assurance of obtaining a good result and with little or no shortening.

One of our most grateful patients is a lady past eighty years of age who had a fracture of the femur treated by this method. Now she is able to walk about without help and with no limp. I do not believe any other method of treatment would have given this result.

In the aged, whose organs are barely able to function under ordinary conditions, the shock of any fracture may prove fatal, no matter how prompt or expert the treatment. Any one of a number of fatal complications may develop soon after the accident, or even some time after it. We must keep in mind that there are many patients up and about, regarding themselves as in good health, whose reserve of vitality is so low that they cannot survive even a slight injury; so it is no occasion for surprise that some patients

9. Fracture of the neck of the femur held with Smith-Petersen nail.



11. This shows the neck of a femur into which a Smith-Petersen nail has been inserted and the bone cut away to show its position with relation to the rest of the bone.

10. This shows a normal femur marked at the area where a fracture often occurs.

with a fractured hip succumb in a few days, no matter how careful, how well planned and how well executed the treatment, some fractured bones will refuse to reunite. The regenerative powers of the bone are gone and this is something which cannot be supplied by the surgeon. Even where the parts are held in position over a long period of time there may be no union.

The fact that we can hold the fragments in position with internal fixation, without the aid of any external splint whatever, allowing the patient perfect freedom of motion, within reasonable limits, enables us to obtain results that heretofore have been impossible. The mental shock and distress of the accident and the pain are greatly reduced. The moment the fragments are reduced and there is no motion at the site of fracture, the pain is greatly reduced. Pain itself, together with the shock, may carry off the very feeble. Doing away with the discomfort and confinement of plaster splints which interfered greatly with change of position for long weeks or months, together with the mental distress that comes along with all this, is now a thing of the past in this type of fracture. Of course, plaster splints may be necessary in certain types of fractures, yet the vast majority of cases do not require them. Another

thing that has been a great worry to patients is that many of them are not able to take care of their expenses over a long period of time. When plaster splints were necessary and special nurses often required for weeks, this was beyond the financial means of the average patient. Now, however, after a few days in the hospital, most of these patients can be cared for at home without special nurses. Many patients are able to resume their occupations in a short while. Some are so comfortable they can transact business by using the telephone a few days after the accident.

A patient who has reasonable health and vitality and reasonably good circulation at the site of the fracture, can hope for good union with little or no shortening, nor deformity, and good functional use afterward. Non-union has been reduced to a minimum. Deformity has been reduced greatly. Union, if at all, is usually good and sufficiently strong to allow the patient to go about as usual.

In the light of our present knowledge, I feel that in all fractures of the neck of the femur, where this method of treatment is at all applicable, it is the method of choice offering the best results from every viewpoint.

Court Opinion Cites Basic Reasons for Professional Ethics

(Editorial, *Ohio State Med. Jl.*, Sept.)

The code of ethics of the medical profession was promulgated to protect the public; not to safeguard the interests of the physician. Statutes will be unnecessary so long as the physician respects and lives up to the code which includes all the restrictive principles found in the law, and more for good measure.

The Massachusetts Supreme Court, recently, in a case contesting the constitutitionality of a statute making it unlawful for dentists to advertise had this to say:

"The Commonwealth has an interest in attracting to the learned professions men of ability, capable of adorning them, and in enabling such men to survive in competition with others. It has an interest in spreading as widely as possible among its citizens the benefit of the professional services of the most competent practitioners as distinguished from those who barely possess the minimum qualifications for beginning practice at all. It has an interest in leaving its professional men free to improve their professional qualifications, without the necessity of devoting time and effort to the competitive pursuits of clients or patients. It has an interest, too, in freeing its citizens from the pressure of salesmanship in the formation of confidential professional relations.

"The Legislature might find, and apparently did find in the case of dentists, that these public interests would be injuriously affected by free competition among practitioners without restraint as to methods. The Legislature might consider that, in general, practitioners of high character, deep learning and great skill are more conscious of vast areas of knowledge not yet explored than of the narrow fields in which they may have attained mastery; that they are restrained in speech, and careful that promise never outruns performance; and that as a class they are either incapable of advancing themselves by brazen self-laudation, or scorn resort to that means. The Legislature might conclude from human experience that practitioners of scant competence, like charlatans and demagogues, are likely to make up for want of genuine merit by an expert knowledge of mass psychology and great skill in appealing to the hopes and emotions of the uninformed and credulous. Advertising practitioners, as fast as discovery of their comparative incompetence causes the loss of clients or patients, for a long time can obtain new ones through skillful publicity. It may be that, even with complete freedom in advertising, practitioners of unusual competence ultimately would succeed and others ultimately would reach the level of their merits; but in the meantime thousands if not millions of citizens might receive inferior service in the belief, induced by professional advancement through the recommendation of satisfied clients or patients, progress may be slower, but it bears more relation to merit. The Legislature, taking the view which has been expressed, might conclude that the regulations made were for the protection of the public interests.

"The restriction and even the prohibition of advertising by members of the learned professions constitute a lawful exercise of the police power, and not, as has been contended, a violation of constitutional provisions protecting liberty and property, or discriminatory legislation."

Technic of Caudal Anesthesia

(T. F. Reuther, Chicago, in *Chn. Med. & Surg.*, Aug.)

The patient, who has already had a barbiturate sedative, is placed upon his abdomen on the table. It is not necessary to raise the hips on a pillow. The skin over the sacrum is prepared in the usual manner.

In patients of average weight, the sacral hiatus is easily palpable. The tip of the left index finger at the tip of the coccyx and the palm flattened along the sacrum, the hiatus is usually midway between the metacarpophalangeal and the proximal phalangeal point. In the obese use an imaginary equilateral triangle on the line joining the two posterior superior spines, the apex extending toward the coccyx always falls over the hiatus. Variations in the size and shape of the hiatus, as well as in the curvature of the sacrum, occur normally and must be remembered.

A 20-c. c. Luer syringe is filled with a 2% solution of metycaine *without adrenaline*, and a fine hypodermic needle attached. To use raise a wheal in the skin over the hiatus and inject the subcutaneous tissue and the sacrococcygeal membrane. From 2 to 5 c. c. of solution are used in this infiltration.

The fine needle is replaced with a large, sharp 3-in. long needle, which is inserted through the skin wheal down to the ligament and through it. The point is then in the sacral canal. Advance the needle no more than a centimeter after the ligament is punctured. Forceful aspiration is then made, with the needle rotated a quarter turn at each aspiration. If no blood appears in the syringe, injection is begun. With the large needle properly placed, there should be no sense of resistance to the injection of the solution. Rapid injection will cause an increase of pressure on the dural sac and the patient to breathe deeply.

The solution left in the syringe after the skin injection (usually from 15 to 18 c. c.) is injected into the sacral canal. The needle is removed, the site of puncture touched with an antiseptic solution and the patient allowed to turn on his back. After 5 to 10 miutes the preparation of the operative field is begun and by the time this is complete the anesthesia is adequate and will last from 45 minutes to 1½ hours.

Ovarian Tumors*

A Surgical-Pathological Discussion

EDGAR R. PUND, M. D., Augusta, Georgia
Department of Pathology University of Georgia School of Medicine

IN recent years the attempt to correlate the clinical and histologic picture of ovarian tumors has resulted in a classification based on symptomatology and histogenesis. In this classification the nomenclature refers to the derivation or function of the tumor and does not indicate whether it is benign or malignant. This has produced considerable confusion from the standpoint of surgical pathology, and from the literature one gains conflicting ideas as to prognosis, operability and treatment. Many authors have confused mortality with malignancy to the detriment of statistics. If the same criteria of malignancy were used for other tumors, we would have to use such meaningless expressions as benign carcinoma and benign sarcoma. Most of us have learned to accept from pathologists reports which denote benignancy or malignancy by the use of simple understandable expressions such as papilloma, adenoma, carcinoma and sarcoma. This is an aid to the clinician, especially in rare tumors, and these descriptive terms should be used whenever possible.

It has been known for some time that tumors may function, particularly those that arise from the glands of internal secretion. An adenoma of the parathyroid decalcifies bones; of the islands of Langerhans it produces hypoglycemia; of the thyroid it may lead to hyperthyroidism; and of the pituitary it causes Cushing's syndrome. The fact that some ovarian tumors function is not sufficient reason to discard the understandable terms, as is the case in such ovarian tumors as granulosa-cell tumor, arrhenoblastoma, thecoma and luteoma. On the other hand, the functional syndrome, while suggestive, is by no means pathognomonic. Symptoms of ovarian incretory tumors are produced by follicular cysts, corpus luteum cysts and dyspituitarism.

It is important for the clinician, as well as the pathologist, to know the embryology of the ovary and of its neighboring structures, the physiology and its reflected effect on the organism as a whole, and common terms should be used to denote benignancy or malignancy. It is the purpose of this paper to discuss the ovarian tumors and to fit them into the classification of tumors in general, which is based on potentiality, histogenesis and histology. Endocrinologic aspects will also be considered. To do this we have reviewed and classified the 280 ovarian tumors in our files from some 35,000 specimens.

Potentiality of the cell of origin is an essential factor in the classification. Tumors arise from multipotent or unipotent cells. The multipotent cells of the ovary are the ova which give rise to the teratomas, either cystic or solid, benign or malignant. Since any kind of tissue may be present in a teratoma, a tumor of this kind occasionally elaborates hormones. It thyroid is present hyperthyroidism may result; a pregnancy reaction occurs if chorionic tissue is present: and speculation takes us far afield. Teratomas of the ovary are commonly cystic and these are almost always benign. However, one of the tissues of the teratoma may grow wild and a carcinoma or sarcoma result. Solid teratomas are rare and more frequently malignant. In our series of 280 ovarian tumors 87 (31 per cent) were teratomas, two of which were solid. Eighty-five were the usual cystic dermoids, one of which had become malignant because an epidermoid carcinoma developed from the lining of the cyst[1]. The age range of these patients was from 17 to 60 years, with an average age of 32 years. Fifty-three per cent occurred in white women of an average age of 34 years, and forty-seven per cent in negroes of an average age of 31 years. Sixteen and five-tenths per cent occurred bilaterally and eight per cent were associated with other ovarian tumors (cystic adenomas and cystic adenocarcinomas).

Tumors arising from unipotent cells must be divided into Ordinary Blastomas and Transitional Blastomas. According to Adami[2] all tissues of the body are divided into lining structures and pulp structures. The lining structures are composed of cells which are cemented together to form a surface, while the pulp cells elaborate intercellular substance which separates the individual cells, or the cells are loosely distributed in a reticulum. Benign tumors of the epithelial lining become papillomas and adenomas and their malignant counterparts become carcinomas. The benign tumors of pulp tissues are designated by adding the suffix oma to the type tissue of origin such as

*Read before Piedmont Post Graduate Clinical Assembly, Anderson, S. C., September 20th

fibroma, myxoma, osteoma, myoma; and the malignant tumors are called sarcomas. Most pulp tumors arise from the mesoderm, most epithelial tumors from the ectoderm or entoderm. Of these three primitive germinal layers the mesoderm is originally a pulp structure, the ectoderm and entoderm lining structures, and the tumors retain their characteristics of lining or pulp whatever the degree of anaplasia. These are the ordinary blastomas.

There exist, however, in the body some epithelial or lining structures derived from the primitive mesoderm which has a pulp structure. Because anaplasia retraces histogenesis, the malignant counterpart of these adenomas will be either a carcinoma, carcino-sarcoma or sarcoma, depending upon the degree of anaplasia. Thus, Adami has included a group of transitional tumors which are found chiefly in the uterus, ovary, suprarenal and kidney. A general rule for all such tumors is: So long as they retain their epithelial characteristics even through carcinomatous, they are late in metastasizing. The carcinoma of the kidney, the so-called Grawitz tumor, (a mesenchymatous epithelial tumor), and the adenocarcinoma of the uterine body (a mesothelial tumor) illustrate this fact, as well as the epithelial tumors of the ovary. However the degree of anaplasia is easily measured by their reversion to sarcomatous structure, and then their degree of malignancy increases.

Ordinary blastomas which maintain their pulp characteristics as benign and malignant tumors may arise in the ovary from the connective tissue and from the smooth muscle. These tumors behave in a manner similar to that of their homologues in other parts of the body and, when benign, are fibromas and leiomyomas; when malignant, sarcomas. Leiomyomas occur rarely. Only one was observed in our series which represents 0.36 per cent. These tumors are obviously without hormonic symptoms.

Fibromas are common. It is our impression that there are two kinds of fibromas of the ovary—one type derived from the peculiar ovarian stroma which participates in the development of the theca and which has its origin from the particular mesoderm from which the follicular epithelium develops; the other from the ordinary supporting connective tissue. Thus the parenchymatous fibroma may or may not function in a hormonic manner. This fibroma is very cellular and elaborates little intercellular substance, and the cells contain a varying amount of lipoids. A high cholesterol and phospholipid content is probably a manifestation of hormonic storage[3] and hence they may function as incretory tumors and are spoken of as thecomas. The hormone may be estrin or progestrin and produces menstrual disturbances. We are in partial agreement with Schattenberg and Harris[4] that "the theca-cell tumor seems to represent a more or less disputed category. On the one hand those springing from the theca externa are considered by some as fibromata. On the other hand those arising from the theca interna and identified by their fat content are related to the granulosa-cell tumor." Schiller[5] considers the xantho-fibroma-theca-cellular as an unripe cellular fibroma which acts as a fibroma mechanically and as a granulosa-cell tumor in a hormonic manner. Clinically, then, one can not differentiate a fibroma from a granulosa-cell tumor.

Fibromas are benign and usually unilateral. The malignant counterpart is a sarcoma. We have encountered one fibrosarcoma in our series which we thought arose from the non-functioning ordinary connective tissue and there were no hormonic symptoms. This diagnosis was based upon the presence of collagen. On the other hand, the small spindle-cell sarcoma may be derived either from granulosa cells or parenchymatous stroma, and these usually give rise to hormonic symptoms. These are grouped with the granulosa-cell tumors. Seven per cent of our ovarian tumors were fibromas and the majority occurred after 40 years of age. The average age was 46.2, the age range 19 to 76 years. They were equally divided among the white and colored races but occurred in an older group in the white—54.8 against 37.6 for the negro. They were always unilateral and only one was associated with an adenoma.

The transitional blastomas may be divided into those which are derived from endothelium and those from epithelium. The benign tumors of endothelial origin are hemangiomas or lymphangiomas, the malignant tumor a sarcoma hard to distinguish from a sarcoma of connective-tissue origin. We have encountered two small hemangiomas of the ovary, 0.7 per cent of the total number of tumors.

Other than teratomas, all epithelial tumors of the ovary are derived from mesoderm and therefore belong in the transitional group. Chief among the epithelial tumors are the adenomas and adenocarcinomas of germinal mesothelial origin. The germinal mesothelium that covers the ovary reflects the development of Pflüger's egg cords in its potentiality of growth. This idea is supported by the fact that similar tumors are not found in the testis. Adenomas and adenocarcinomas may be cystic or solid; the cystic type predominates. Papillary ingrowths are commonly encountered within the cysts. They are called adenomas when penetration of the capsule has not occurred or when anaplasia is not evident. In our series the adenomas vie with the teratomas for place as the most

common of ovarian tumors—31 per cent. They may be serous or pseudomucinous and occur at any age. The average age was 36, the range from 16 to 71 years. Sixty-nine and nine-tenths per cent occurred in negroes, 30.1 per cent in whites, and there was a higher age incidence in the whites —38 to 32 years. In 9.2 per cent of the cases they were associated with other tumors—5 with teratoma, 1 with fibroma, 1 with Brenner tumor and 1 with hemangioma. Adenoma occurred bilaterally in 9.2 per cent of all cases. This tumor is potentially malignant, especially when papillary processes are present and the contents are spilled within the peritoneal cavity.

The adenocarcinomas are similar to the adenomas and their relative number depends upon the time of operation. They generally begin as adenomas, but immediately on penetration of the capsule they become malignant. Metastases take place by transplantation. However, even in the presence of peritoneal transplantation, the primary new-growth should be removed because occasionally the transplants regress, especially after x-ray therapy. Twenty-two and nine-tenths per cent of our tumors were adenocarcinomas—80 per cent cystic, 20 per cent solid. The average age of these patients was 48 years, in comparison to 36 years for the patients with adenoma. The age factor confirms the opinion that adenomas, left alone, develop into carcinomas. They occurred more commonly in the white—as compared to the negro 76.6 per cent against 23.4 per cent; and again the age incidence was higher in the whites than in the negroes—51 to 41 years. Twenty-five per cent occurred bilaterally and three per cent were associated wiith teratomas. Two of the solid tumors exhibited transitional characteristics and should be classified as carcino-sarcomas. The transitional tumors of germinal mesothelial origin exert no hormonal influence other than by destruction of the ovaries.

Tumors of the follicular epithelium have been named granulosa-cell tumors. There are two opinions as to the origin of the granulosa-cell: one, that it is derived from mesenchyme; the other that the follicles originate from mesothelium. We will not discuss the merits of these theories; in either case anaplasia will result in transition, because both mesenchyme and mesothelium are derived from mesoderm, a pulp structure. Many observers think that granulosa-cell tumors arise from rests rather than from functioning cells. This is supported by the fact that they may occur in elderly women when the follicles have disappeared[5], also by the report of an ectopic granulosa-cell tumor[6]. Three and six-tenths per cent of our tumors of the ovary were of the granulosa-cell type, which compares with 2.11 per cent reported by Countiss[7]; and they represent 11.6 per cent of the malignant ovarian tumors, which compares to 14 per cent of Novak and Gray[8]. They may occur at any age. Our ten patients had an average age of 40.5 years—age range 21 to 64 years. Sixty per cent were negroes, 40 per cent whites—average age the same for both groups. Granulosa-cell tumors are rarely bilateral; one of the ten of our series involved both ovaries.

Histologically they exhibit various degrees of differentiation from a mature follicular adenoma to a spindle-cell sarcoma. Schiller[5] states that they are primarily benign while Novak and Brawner[8] found 28.1 per cent malignant. In our series 40 per cent were, histologically, definitely malignant; *i. e.*, they exhibited sarcomatous characteristics, but only 20 per cent were invasive. We consider the presence or absence of invasion as the best criterion for prognosis, because tumors still confined within the capsule of the ovary usually prove to be curable.

The symptoms are due to the secretion of estrin; therefore hyperestrinism is suggestive, though by no means conclusive. Cystic glandular hyperplasia of the endometrium results and produces menstrual irregularities with hemorrhages. Menstrual return, hyperplasia of breasts and increased libido in patients who have passed the menopause[10], and sex precociousness[11 12], are characteristic symptoms.

The common cell origin of ovarian theca and granulosa cell is reflected in the combination of granulosa- and theca-cell tumors. Mixed thecomas and granulosa-cell tumors have been reported[13 14]. We have observed luteinization of the stroma of granulosa-cell tumors thus linking the granulosa-cell tumor and thecoma, and, since various degrees of luteinization may occur in fibromas, there must exist a connection between the parenchymatous fibroma and the theca-cell tumor[3]. Luteinization of the granulosa cells may rarely lead to development of a so-called luteoma. These related tumors, then, find their normal physiological counterpart in the follicular epithelium, corpora lutea and corpora albicantes.

Disgerminoma is the next most common transitional epithelial tumor of the ovary. Because of its brain-like appearance and definite histologic picture it is readily recognized, grossly and microscopically. We have encountered[15] six of these tumors, which represent 2.14 per cent of *all* ovarian tumors, 6.98 per cent of *malignant* ovarian tumors; while Seegar[16] reported an incidence of three per cent of the malignant tumors. They occur in young women; the average age of our patients was 23.8 years—the range 12 to 35. Three of the patients were negroes with an average age of 22 years, three white with an average age of 25.7 years. There

is much confusion in the literature concerning the malignancy, histogenesis and incretory activity of these tumors. Schiller[5] states that they are usually benign; Novak and Gray[8] grant them a low degree of malignancy; Russell[17] found one in seven malignant, and Seegar[16] reports 35 to 60 per cent. It is interesting to note that the reported percentage of malignancy bears a direct relation to the date of publication. To continue this ascending incidence of malignancy we report 100 per cent. Four of our six patients are known to have died as a result of the tumor; in one recent case the new growth could be only partially removed, and in the sixth patient the tumor is known to have recurred. At the time of operation the tumor was invasive in four patients, bilateral in three. According to our histologic conception, disgerminomas should be considered malignant. The looseness of texture indicates a departure from epithelial characteristics and, therefore, anaplasia.

The generally accepted theory of origin, and hence the name, is that of Meyer, who attributes their origin to the undifferentiated sex cell. These cell rests are neither feminizing nor masculinizing; so if this theory be true, no endocrine effects would be produced except through destruction of the ovaries. On the other hand, some consider that they arise from the rete. We concur in the latter opinion. In the consideration of this tumor as well as the arrhenoblastoma it must be remembered that every ovary is in part a testis. The testicular portion of the gonad, which develops before the ovarian part, remains as a vestigial structure, the rete. Some of the tumors of the ovary are therefore homologous to those of the testis. In normal ovaries, as well as abnormal ones, the amount of testicular tissue varies, as so often happens in all vestigial structures. One would expect to find such tumors, however, relatively more commonly in women with ovo-testes, or in pseudohermaphrodites and hermaphrodites. The facts that disgerminomas occur commonly in hermaphrodites and pseudohermaphrodites[16, 17] and that they are tumors common to the female and male gonad support the view that it originates from the rete ovarii. It has been noted too, that commonly a rim of ovarian tissue is present about these tumors which indicates central origin[17]. It is also interesting to note that symptoms of masculinization have been reported[16, 18] which regressed after removal of the tumor. Masculinization depends upon the presence of cells of Leydig and, since these have not been reported in these tumors, they are probably rare and masculinization would therefore occur infrequently. An interesting but unexplained observation is the occasional occurrence of chorion-carcinomas and teratomas[16] in connection with these tumors. This supports the idea of rete-cell origin, because in the development of the gonad this part develops first and is therefore less removed by differentiation from the primitive blastomeres.

The arrhenoblastoma is a transitional tumor which is so named because of its masculinizing effects. It is a rare tumor which is said to be derived from the testicular anlage of the ovary. The masculinizing effects are characterized by hypertrophy of clitoris, masculine crines, coarse voice, amenorrhoea, atrophy of breasts and loss of the subcutaneous fat of the buttocks and thighs[10]. We have not encountered an arrhenoblastoma in our series, but have had the opportunity of studying three tumors which were lent us.

The pathologic picture is so variable that in order to securely establish the diagnosis clinical symptoms must support the histologic findings. One gains a confusing picture from the literature. According to Novak and Gray[8] the testicular tubular adenoma (type of arrhenoblastoma) gives symptoms of masculinization in only one third of the cases. The anaplastic type, however, always produces masculinization. Since masculinization is dependent upon the presence of testosterone, which is elaborated by the interstitial cells, there remain several questions to be answered in regard to these tumors. Why does masculinization occur occasionally from disgerminomas? Why does masculinization occur more commonly with the anaplastic tumors than with the more mature types of testicular tumors, which is contrary to the behavior of other functional tumors? Is it possible that the anaplastic types of arrhenoblastomas are tumors of the interstitial cells? According to Barrozo[10] interstitial cells may be found in the normal ovary; it is therefore logical to assume that tumors may arise from such cells.

From a study now in progress of atrophic testes with interstitial cell hyperplasia and of several sections of arrhenoblastomas, as well as disgerminomas, we have formulated a working hypothesis in an attempt to answer these questions. The testicular part of the gonad in both sexes develops from a condensation of cells that becomes canalized and gives rise to epithelial-lined tubules which are supported by the remaining condensed tissue from which arise the interstitial cells. In the male the presence of the male sex cells converts the proximal tubules into the seminiferous tubules which are continuous with the rete. In the female the absence of male sex cells causes the proximal tubules to atrophy, but the rete remains as a vestigial structure. Since the rete and the immediate supporting tissue are derived from this specialized masculinizing tissue, there may be two directions of specilization—one toward the development of

carrying tubules, the other toward the development of interstitial cells—or there may be an admixture of the two. If there be a tumor of the ovary that arises from the rete and forms tubules lined with non-secretory epithelium, then we have the testicular tubular adenoma, a type that does not masculinize. If, however, a few cells develop the incretory activity of the interstitial cells, masculinization may occur. On the other hand, if the tumor is composed of abortive tubules that are not specialized for a drainage system, a probable inhibitory effect is lost and many of the cells differentiate to an interstitial type; consequently, masculinization is more common in the anaplastic types of arrhenoblastomas. We assume then that tubular formation inhibits specialization of the interstitial cells. This is supported by the fact that interstitial-cell hyperplasia occurs in testes when atrophy of the seminiferous tubules takes place. Now if anaplasia assumes such proportions in tumors that arise from the rete that sarcomatous structure becomes manifest, function becomes almost entirely subordinated to growth and therefore, in our opinion, we may have a disgerminoma. The fact that disgerminomas occasionally masculinize, the fact that they are central in origin, and that they are common to both sexes are further supports to this hypothesis.

From the clinical standpoint masculinization does not necessarily indicate the existence of an arrhenoblastoma, but these symptoms may warrant exploration to rule out this possibility. The removal of such a tumor is followed by relief of symptoms. The arrhenoblastomas, like the disgerminomas, occur in young women. They are generally unilateral. According to Schiller[5], they are primarily benign; but according to Norris[20], they are usually malignant and many of the reported arrhenoblastomas have proven malignant.

In any discussion of ovarian tumors heterotopic tumors must also be considered. To understand these it is again essential to know the embryology of the ovary. The ovary develops in proximity to the suprarenal, consequently inclusions and therefore tumors may be encountered. The gonad uses part of the second kidney, mesonephros, in its development; and tumors of this origin may be found. This is particularly true in regard to the female gonad, by virtue of the fact that while the mesonephros becomes a functioning part of the male gonad it is only vestigial in the female. Since growth is subordinated to function, then such tumors would occur more commonly in the female.

Hypernephroma of the ovary is a rare tumor[10, 21] that may produce masculinization. It is composed of large lipoid-laden cells which in all respects resemble those of tumors of the suprarenal.

Schiller[22] has reported ten mesonephromas of the ovary, some of which were solid and some cystic. We have observed one in a woman 45 years of age. This tumor was solid, in part carcinomatous and in part sarcomatous. No hormonic symptoms are produced by the mesonephroma.

The Brenner tumor is a rare, benign, solid and cystic growth found in elderly women[5], and which gives rise to no endocrine symptoms. Its solid portion is dense fibrous tissue in which are included nests of squamous epithelium and sometimes there is cyst formation. Because of the squamous type of epithelium, Schiller[5] attributes their origin to inclusions of urinary tract. Similar epithelial inclusions are not uncommonly seen in the serosa of the tubes. Our series includes only one Brenner tumor, that in a woman 48 years of age.

Summary

Two hundred and eighty ovarian tumors are classified according to frequency as follows:

		%
Teratoma	87	31.07
Germinal adenoma	87	31.07
Germinal adenocarcinoma	64	22.86
Fibroma	20	7.14
Granulosa-cell tumor	10	3.57
Disgerminoma	6	2.14
Hemangioma	2	.71
Brenner tumor	1	.36
Mesonephroma	1	.36
Fibrosarcoma	1	.36
Fibromyoma	1	.36

Since the ratio of whites to negroes in Augusta is 60 to 40, we find little difference in the distribution of tumors in the two races with the exception of adenomas and adenocarcinomas of germinal epithelial origin. The adenomas occurred more commonly in negroes while the adenocarcinomas occurred more commonly in members of the white race. The age of negro patients with ovarian tumors was consistently lower than of the whites.

Many ovarian tumors are commonly bilateral. This is particularly true for the disgerminomas, the germinal epithelial adenomas and adenocarcinomas and the teratomas. The teratomas, adenomas and adenocarcinomas are not uncommonly associated tumors.

Removal of all ovarian tumors should be attempted. In most instances, in the absence of penetration of the capsule, the prognosis is good.

Surgical cures are sometimes attained even with presence of peritoneal transplants, when the primary adenocarcinoma of germinal epithelium is removed and removal is followed by Röntgen-ray therapy.

The prognosis of tumors of the ovary can be determined by histologic study, but it is essential to understand the histogenesis of these tumors.

The fibroma, thecoma, luteoma and granulosa-cell tumor are derived from the same cell and reflect the physiological activity of the ovary. Clinically these tumors can not often be differentiated.

Symptoms, while suggestive, are not conclusive for the diagnosis of ovarian incretory tumors.

A hypothesis is offered to explain the vagaries of the arrhenoblastomas and disgerminomas.

Finally, such terms as adenoma, carcinoma and sarcoma should be used descriptively together with the name that designates the cell of origin.

Bibliography

1. Cardwell, E. S., and Pund, E. R.: Squamous Cell Carcinoma Arising in a Cystic Teratoma of the Ovary. *J. M. A. Ga.;* 27:469 December, 1938.
2. Adami, J. G., and McCrae, J.: *Text Book of Pathology* 2nd. Edition, 1914. Lea and Febiger.
3. Greenblatt, R. B., Greenhill, J. P., and Brown, W. R.: Variations of Lipoid Content in Certain Ovarian Tumors. *Amer. J. Obst & Gyn.* 37:929, June 1939.
4. Schattenberg, H. J. and Harris, W. H.: The Pathology of the Granulosa, Adrenal, Brenner, Disgerminoma and Arrhenoblastoma Types. *South M. J.* 32:734 July 1939.
5. Schiller, W.: Recent Findings in Solid Ovarian Tumors. *J. Obst. & Gyn. of Brit. Emp.* 43:1135, December 1936.
6. Voigt, W. W.: Primary Giant Granulosa Cell Tumor of Retroperitoneal Origin with Development into the Mesosigmoideum. *Am. J. Obst. & Gyn.,* 36:688, October. 1938.
7. Countiss, E. H.: Granulosa Cell Tumor of Ovary. Report of Case followed by Pregnancy. *Am. J. Obst. & Gyn.* 36:680, October 1938.
8. Novak, E., and Gray, L. A.: Clinical and Pathological Differentiation of Certain Special Ovarian Tumors: Granulosa Cell Carcinoma, Arrhenoblastoma, Disgerminoma, Brenner Tumor. *Am. J. Obst. & Gyn.* 31:213, February 1936.
9. Novak, E. and Brawner, J. N. Jr.: Granulosa Cell Tumors of the Ovary., A Clinical and Pathologic Study of 36 Cases. *Am. J. Obst. & Gyn.* 28:637, November, 1934.
10. Chaney, R. H., and Greenblatt, R. B.: Tell-tale Evidence in Certain Ovarian Tumors. *J. M. A. Ga.* 27:91. March, 1938.
11. Bland, P. B., and Goldstein, L.: Granulosa-Cell Tumor of the Ovary in a Child with Precocity. *Am. J. Obst. & Gyn.* 28:596, October, 1934.
12. Parks, J.: Granulosa Cell Tumor of Ovary with Precocious Puberty. *Am. J. Obst & Gyn.* 36:674. October, 1938.
13. Greenhill, J. P., and Greenblatt, R. B.: Status of the Thecoma and its Relationship to the Granulosa Cell Tumor. *Am. J. Obst. & Gyn.* 36:684, October, 1938.
14. Thompson, J. A., and Stabler, F.: Lipoid Rich Granulosa Cell Tumor with a Discussion on Theca Cell Tumor. *J. Obst. & Gyn. Brit. Emp.* 45:769, October, 1938.
15. Greenblatt, R. B., and Pund, E. R.: Disgerminoma Ovarii. *Am. J. Obst & Gyn.* 35:677, April, 1938.
16. Seegar, G. E.: Ovarian Disgerminoma. *Arch. Surgery* 37:697, November, 1938.
17. Russell, P. M. G.: The Seminoma or Disgerminoma of the Ovary. *J. Obst. & Gyn. Brit. Emp.* 45:258, April, 1938.
18. Gough, A.: A Case of Disgerminoma of the Ovary, Associated with Masculinity. *J. Obst. & Gyn. Brit. Emp.* 45:799, October, 1938.
19. Edgard Barrozo do Amaral: Contribuico ao estudo das cellulas de Berger. *Bol. Univ. de Sao Paulo* 2:1938.
20. Norris, E. H.: Arrhenoblastoma: A malignant Ovarian Tumor Associated with Endocrinological Effects. *Am. J. Cancer.* 32:1, January, 1938.
21. Stadiem, M. L.: An Ovarian Hypernephroma. *Am. J. Surgery.* 37:312, August, 1937.
22. Schiller, W.: Mesonephromas of Ovary. *Am. J. Cancer.* 35:1, January, 1939.

The Diagnosis of Syphilis in General Practice

(H. J. Beck, Lamar, Colo., in *Med. Rec.*, Sept 6th.)

Of 47 cases in this series diagnosed or treated, 4 cases were in the primary or early secondary stage, and symptoms and signs were such that diagnosis was comparatively easy. Three cases presented typical symptoms of neurosyphilis, and there diagnosis was easy. In 6 cases the diagnosis had been made previously; 34 cases presented themselves in latent, later secondary or early tertiary stages, and it is this group which presents such a variety of bizarre and unusual symptoms.

In 8 cases no complaint was presented, the diagnosis being made in the course of a routine examination; 7 cases were diagnosed due to the presence of syphilis in spouse or parent; otherwise no symptoms were present. In 5 cases, the complaint was nervousness, vague abdominal pain; or indefinite symptoms of being unwell. In 12 cases a previous diagnosis sinusitis, goiter, rheumatism, sore throat, Vincent's angina, convulsions, secondary anemia or salpingitis had been made. In 2 cases the patient complained that a previous laparotomy wound refused to heal; one patient was unable to drive an automobile at night; one subjected to a salpingectomy for vague pelvic pains was not relieved by surgery but was by antiluetic treatment. A striking lack of resistance to upper-respiratory infections was noted in some cases, often this being only symptoms present.

Erythematous rashes of other than a transitory nature, alopecia and mucous patches seem to be on the wane, and instead syphilis is manifesting itself by visceral and neurological symptoms of a later stage.

Since the history is notoriously inaccurate and physical examination often disappointing, one of the serological examinations will repay the physician many fold. When this service is not available a few dollars worth of equipment and a little practice will be all that is necessary to master the technique of one of the flocculation tests such as the Kahn or Kline.

The patient does not need to present the shuffling gait, fixed pupils and gastric crises, or the advanced mental deterioration of general paresis before the diagnosis of nervous-system syphilis is made.

In all cases of this type in which a definite clinical diagnosis cannot be made, a blood test should be done, and if doubt still exists a spinal-fluid examination.

Congenital syphilis should be in the thoughts of any doctor who ever delivers or cares for any baby.

7000 Routine Tests of white patients, unselected, in a Washington office practice were positive for syphilis in 2.35% of the cases.—*Lichsenring.*

A Comparison of Sulfanilamide, Sulfanilyl-Sulfanilamide, and Sulfapyridine*

Walter E. Daniel, M. D., Charlotte, North Carolina
Thompson-Daniel Clinic

SINCE the discovery of sulfanilamide many new compounds having the sulfanilamide base have been synthesized. Perhaps the most widely used of these new compounds is sulfapyridine which is formed by attaching a pyridine group to the sulfanilamide molecule. Sulfanilyl-sulfanilamide has also been used experimentally but is not yet on the market. It is formed by joining two sulfanilamide molecules through the sulfonamide group and is to be marketed under the trade name disulon. As disulon is relatively insoluble its more soluble salt, sodium disulon, has been made available.

These four compounds are absorbed from the gastrointestinal tract in direct ratio to their relative solubilities. Sulfanilamide, which is most soluble, is most rapidly and most completely absorbed, the peak of blood curve following a single dose being reached in about three hours. Sulfanilyl-sulfanilamide, which is least soluble, is absorbed very poorly, and after a dose the peak of the blood curve is not reached for seven hours. The blood concentration, likewise, is much lower than after the same dose of sulfanilamide. Sulfapyridine and sodium sulfanilyl-sulfanilamide are not so soluble as sulfanilamide, but are more soluble than sulfanilyl-sulfanilamide, so their blood curves run a course between the two and the peaks of the blood curves are reached in about five to six hours.

In patients with normal kidney function, the excretion curve of each of the four compounds follows its own blood level curve. Consequently, after a single dose of 3 gms. approximately 1200 mgm. of sulfanilamide will be excreted in 24 hours; while the figure for sulfapyridine is 800 mgm., that for sodium sulfanilyl-sulfanilamide is 750 mgm. and that for sulfanilyl-sulfanilamide is 500 mgm. Contrary to the generally accepted belief, excretion of these compounds is neither facilitated nor hastened by increased consumption of fluids. The excretion of these drugs is directly proportional to the kidney function as measured by the excretion of psp. This is true both in the normal and the abnormal kidney inasmuch as the differential drug excretion is comparable to the differential psp. excretion. Using the psp. test as a guide to dosage it is possible to obtain blood levels of 3-5 mgm. per cent, by giving 0.5 gm. of sulfanilamide daily for each 1/10th of psp. injected that is excreted in the first 30 minutes. This level has been shown to be sufficient in urinary-tract infections.

Experimentally sulfapyridine is given a therapeutic index of 4 as compared to sulfanilamide in infections caused by the pneumococcus, the staphylococcus, or Friedlander's bacillus. Sulfanilyl-sulfanilamide is given a therapeutic index of 5 as compared to sulfanilamide in infections caused by the streptococcus, the staphylococcus and the miningococcus. Inasmuch as sulfapyridine and sulfanilyl-sulfanilamide are considerably less soluble than sulfanilamide, a better evaluation of their relative toxicities could be made on the basis of the blood concentration of the different drugs.

Both sulfapyridine and sulfanilyl-sulfanilamide are better tolerated than sulfanilamide. The mild toxic reactions—headache, dizziness, vertigo, lassitude, etc.—are less pronounced. The allergic phenomena—rashes, asthma, fever and angioneurotic edema—seem to occur with about the same frequency. These phenomena represent an acquired sensitivity since they appear late in the course of administration. Sensitivity to one member of this group does not necessarily indicate sensitivity to the other members of the group, but if a patient acquires a sensitivity to one of these drugs it seems reasonable to assume that the same patient will be more prone to develop sensitivity to the other drugs.

Gastrointestinal disturbances are both mild and infrequent following the use of sulfanilamide and sulfanilyl-sulfanilamide. However, it is the most frequent reaction to follow sulfapyridine administration and is sometimes so severe as to interdict treatment. By observing nausea and vomiting following the use of noesulfapyridine by vein, Long concluded that it was produced by a central action rather than by gastric irritation.

Acute hemolytic anemia and agranulocytosis from sulfanilamide have been encountered frequently; from sulfapyridine, less frequently; and from sulfanilyl-sulfanilamide not at all. However, long-continued administration of any of these drugs

*Read before the Catawba Valley (N. C.) Medical Society, Morganton, Sept. 12th, 1939.

may produce a slowly developing anemia which disappears when the drug is discontinued.

A few cases of kidney colic have been reported following sulfapyridine, due to the formation of sulfapyridine stones in the kidney pelvis and tubules. These stones can also be produced experimentally, but they disappear when the drug is stopped. Two cases of jaundice thought to be due to delayed liver damage have been attributed to sulfapyridine. The jaundice developed three months later and that it was caused by sulfapyridine is questionable.

Acidosis has been reported from sulfanilamide therapy but as a rule is not dangerously severe. It is thought to be due to loss of sodium and potassium through the urine. Since I have encouraged my patients to take an abundance of sodium chloride while taking sulfanilamide they seem to tolerate the drug with less discomfort. It is possible that the salt is replacing the sodium that is lost.

The most distressing toxic reaction from sulfanilyl-sulfanilamide is peripheral neuritis. We have encountered this reaction twice in approximately 100 cases. The Alba Pharmaceutical Company reports 0.8 per cent in 3000 cases treated with sulfanilyl-sulfanilamide by competent urologists in the United States and Canada. To prevent this reaction they advocate small doses (1.5 gms. daily for 5 days) and short courses of treatment interrupted by rest periods.

From this comparison of these drugs it is apparent that they can not be administered indiscriminately without danger. However, in them the medical profession has three very powerful chemotherapeutic agents.

References

1. Alyea, Daniel and Harris: Sulfanilamide Therapy in Gonorrhea and its Complications. *So. Med. Jour.* 31: 595-406, April, 1938.
2. Alyea, Daniel and Yates: Sulfanilamide and Disulfanilamide Concentrations in the Blood and Urine. *Jour. Urol.* 41: 14-30, January, 1939.
3. Alyea, and Daniel: Sulfanilyl-Sulfanilamide Therapy in Sulfanilamide-Resistant Gonorrhea *So. Med. Jour.* 32: 608-613, June, 1939.
4. Alyea and Daniel: Sulfanilyl-Sulfanilamide Therapy in Sulfanilamide-Resistant Gonorrhea *Jour. Urol.*—In press.

The Treatment of Some Vaginal Discharges

(E. D. Plass, Iowa City, Iowa, in *Minn. Med.*, Sept.)

In contrast to the situation in adults, gonorrhea in prepubertal girls and in postmenopausal women frequently produces a true vaginitis and rarely invades the upper genitalia or the vulvovaginal glands. At birth the mucosa is of the adult kind and gonococci introduced during birth are unable to gain a foothold. Within a few weeks this immunity disappears with the thinning of the mucosa and the decrease in the acidity of the discharge. Practically the same situation develops after the menopause. In young girls, the gonococcus is the chief offender, while in women past the menopause other organisms are more commonly involved.

In either instance, under local cleanliness and the hormone, preferably in vaginal suppositories, the mucosa assumes an adult character and becomes so resistant that the organisms die from lack of proper environment. Care must be enjoined so that the breasts and uterus are not stimulated too much. The dosage of the hormone will, of course, vary with the size and age of the patient, but very large doses are to be avoided. Uterine bleeding and undue enlargement of the breasts indicate reduction in the dosage or temporary discontinuance. Large doses of Vitamin A may be useful, especially in senile vaginitis of any variety, since this accessory food factor plays a role in epithelial growth. In gonococcal infections, it is also advisable to give sulfanilamide.

Trichomonas vaginalis: Some believe that it produces the vaginitis, whereas the majority agree that it is probably a secondary invader without etiologic significance. Many harbor the organisms without symptoms.

Some of the material from the vaginal wall suspended in normal salt solution is put on a coverslip and this inverted on a hollow-ground slide. The trichomonads—larger than leukocytes but smaller than epithelial cells—are detected by their motility. Frequent douches with a mild acid solution—lactic acid or vinegar—are given. In addition, dextrose or lactose, can be introduced to encourage the growth of the vaginal bacilli which remain. Insufflations of silver picrate or of devegan powder appear to be better than the simple antiseptics and dyes formerly employed.

Trichomonads are frequent and harmless invaders of the mouth and lower gastro-intestinal tract; and, in men, of the prostate and seminal vesicles. Certain parents may appear refractory to therapy, when the continuance of the disease is actually occasioned by repeated reinfections from their own hollow viscera or from sexual contacts.

Monila has been accepted as a cause in certain cases of vaginitis at practically any age, but is more common during sexual maturity and especially during pregnancy; also of diabetic pruritus vulvae. They may be harmless invaders, or they may produce the most severe vaginal irritation. Yeast vaginitis may be suspected when the discharge is flecked with small white particles or when vaginal mucosa has thrush-like patches. Diagnose from stained smears or from cultures.

In the usual case, the topical application of *gentian violet*, in 2% aqueous solution or in the form of suppositories, will be effective; but in rare instances it will be irritating or quite ineffective. Especially in these cases, the combination of potassium iodide and potassium iodate suggested by Haseltine will be useful.

No patient with vaginitis should be treated until after every effort has been made to identify the causative organism.

No Specialists in Obstetrics in Germany.—According to the Bureau of Medical Economics of the A. M. A. (as quoted by Dr. S. B. Chase, Fort Dodge, Iowa) the 12,328 specialists in Germany in 1934 were: Gynecology, 1490; Surgery, 1005; Surgery and Gynecology, 522; Urology, 122; Internal Medicine, 1914; Neurology and Psychiatry, 759; Ophthalmology, 1259; O. R. and L., 1385; Pediatrics, 974; Gastroenterology, 196; Orthopedics 223; Surgery and Orthopedics, 206; Tuberculosis, 229; Stomatology, 119; Röntgenology, 196; Other Specialties, 4.

The Electrocardiogram is of questionable value in determining the state of the heart in acute infectious diseases.— *Sigler et al.*

Hookworm Among College Men

Edward Sandling King, M. D., F. A. C. P., J. S. Simmons, B. S.
Wake Forest, North Carolina
Professor of Bacteriology and Preventive Medicine Student of Medicine
Wake Forest College

THE finding of a marked eosinophilia in a routine blood examination of a student at the Wake Forest College Infirmary prompted the examination of the patient's feces. This examination revealed the presence of ova of *Necator americanus* in the feces and suggested a survey of the entire student body to determine the incidence of infestation among men of college age and social status. This survey was made in March and April of 1939 under the direction of the Department of Bacteriology and Preventive Medicine of the School of Medical Sciences of Wake Forest College.

It was decided that by distributing labelled metal containers in all the classrooms the greatest number of students could be investigated in the shortest time. At the same time a short discussion of the hookworm problem and the purpose of the survey was given. Also they were instructed as to how to collect the specimen. Twenty per cent of the boxes distributed were returned with fecal samples. These were examined by the North Carolina State Laboratory of Hygiene by the smear method. All those having positive reports had blood studies, especially differential white blood counts, before and after treatment at the infirmary and these were in agreement with *Necator americanus* infestation.

One hundred and eighty-nine fecal specimens were examined. Of this number five contained ova of *Necator americanus*. A marked eosinophilia was a feature of three of the five cases and there was a milder degree of acidophile cell increased in the other two. The total red and white blood cell counts were within normal range in all cases. Hemoglobin percentages were in the low normal range.

Treatment

Powdered thymol in capsules was given in 10-grain doses at 6:00, 8:00 and 10:00 a. m. on an empty stomach. This was preceded the night before, and followed two hours after the last dose, by a purgative dose of magnesium sulphate.

Ten days following this medication fecal and blood specimens were again examined, and four of the five were found to be negative and one positive for ova; and these four cases showed a 20-per cent reduction in the eosinophile count, while in the one remaining positive the count was unchanged. In this unchanged case treatment was repeated with good results. These students were advised to report to their home physicians for a follow-up and treatment if necessary after they left school.

Discussion

Hookworm surveys made by the Rockefeller Commission in 1910-1914 and later in 1935 divide the State of North Carolina sharply into areas of high and low hookworm incidence. These areas follow closely those natural divisions of Coastal Plain, Piedmont and Mountain into which the state is divided. In the Coastal Plain the conditions of soil, moisture and temperature are ideal for the development of larvae. In the Piedmont these conditions are less, in the Mountain region least, suitable. The conditions most suitable are stated as: sandy loam soil, 40 inches of rainfall annually and a temperature above 50° F. The Coastal Plain soil is better for the development of larvae than the other two sections, and 80 per cent of the positives found in the Rockefeller survey of 1935 were from the lower thirteen counties of the Coastal Plain area. Of the Wake Forest College students found infested, one was from Florida, one from South Carolina, two from the Piedmont of North Carolina and one from the North Carolina Coastal Plain. This makes comparison of Wake Forest student body incidence of hookworm, with general population incidence in the county in which it is situated, greater still. Wake County's white population, according to the 1935 Rockefeller survey showed a 4-per cent infestation. Infestation with *Necator americanus* is by no means equivalent to hookworm disease, since it is estimated that 50 worms in the gastrointestinal tract are necessary for the production of frank symptoms. This number produces about 2600 eggs per gram of feces according to the egg-counting method of Stoll. Where the smear method is used one egg in every smear should result if there are as many as eight healthy, laying females in the tract. Of our students none was frankly ill. Three were underweight and had been so for a considerable period. Four of the group had suffered obscure, undiagnosed ills during the two-year period pre-

vious to discovery of the infestation.

Conclusion

1. A survey of the student body of Wake Forest College disclosed a 2.5-per cent infestation with *Necator americanus*.
2. The examination of fecal specimens was made by the smear method, so lighter infestations might have escaped detection.
3. The cases were widely distributed geographically.
4. None of the men was frankly ill but four of the five were underweight and physically under par.
5. Thymol in 30-grain divided doses caused stool specimens in four of the five cases to be negative after ten days. No symptoms of poisoning by thymol were observed.

Common Foot Ailments

(E. W. Cullipher, Miami, in *Fl. Med. Asso.*, Oct.)

The muscles may prove defective 1) when there is general weakness following illness or childbirth; 2) as in occupations which require excessive walking or standing, or a rapid increase in body weight; and 3) by continued wearing of incorrect shoes.

As the ligaments yield, the tarsal bones change position and as the long and short plantar ligaments stretch all the tarsal bones become too movable.

In neglected cases the displaced bones are gradually altered in shape; portions of the joint surfaces undergo fibrosis; and chronically strained muscles become spastic and the ligaments retract. Thus the hypermobile foot becomes the spastic flat foot.

Excessive exercise or long periods of standing give greater discomfort. The gait becomes inelastic and one walks with the toes pointed outward and with rise on the toes. In the next stage, the pain is worse when standing than when walking, because walking involves chiefly the use of muscles.

Pain in the knees, hips and back are not infrequent. Treatment is directed towards the correction of all sources of pain and disability. Corns, callouses, infection, etc., should be cured.

Gymnastics are the best means of strengthening the muscles involved, particularly the supinators and the short sole muscles. Seldom can they be done long enough to give complete cure without mechanical aid. The most beneficial single exercise is exercising the sole muscles—picking up small objects with the toes while sitting on a chair, next drawing the foot into inversion, and dorsiflexion. No weight-bearing exercises should be given early.

The best shoe for men is of a soft leather, fits snugly in the heel, has a narrow, semi-flexible shank, practically straight inner border on the sole, and plenty of toe room. Women's shoes should have ample length and toe space, a straight inner border to the sole, which is wide enough to allow all the metatarsal heads to lie flat on its surface. The heel must fit snugly and have an elevation of not over 1¼ in.

A reasonable curtailment of weight bearing is essential during the painful stages. Contrast foot baths should be taken before the exercises twice daily, for a specified time, usually ½ hour. Massage, baking and diathermy are also indicated. I prefer the semi-flexible type of mechanical supports.

The majority of cases of flat feet will respond to treatment by simple and inexpensive alterations to the shoe previously described. A Thomas heel is applied with a raise on the inner border of 3/16ths to 3/8ths in. It may be necessary to add a similar raise to the outer border of the sole. In early and very acute cases the longitudinal arch should be supported with a felt pad. The foot and ankle may need strapping with the foot held in some inversion; weight-bearing should be reduced as much as possible. Exercises begin as soon as soreness allows. In this type of flexible flat foot the metal arch supports chafe and causes calluses, and more atrophy. They may give relief for a short time, but the foot then becomes more painful than before.

Some individuals, however, will not respond to the treatment outlined. Obese men who have to be on their feet almost constantly do better with a rigid-shank shoe and an internal support of sponge rubber and leather so constructed that the amount of elevation in the support may be changed as needed. A small metatarsal pad increases the efficiency of this support. Those individuals who have arthritic changes in the feet, or who have worn a rigid support for several years, also do better with this combination or a rigid support.

The spastic flat foot requires more drastic measures, an attempt should be made to convert it into a flaccid flat foot and treat as such. Adhesive strappings at 4-day intervals for two to three weeks will relax the muscular spasm in the mild cases; but those of longer standing need manipulation under anesthesia, followed by casts for about three weeks. The foot is put up with the heel in supination, and the fore foot in pronation and adduction. Weight-bearing is not allowed after removal of the cast until corrective shoes have been supplied. Physiotherapy should be instituted at once.

Flat feet in children are most common before 6 years. There is seldom complaint of pain, but it is the deformity which causes the parents to seek advice. Built-up arch supports are particularly objectionable. These feet respond well to wedging of the inner border of the heels. Occasionally it is necessary also to add an equal raise to the outer border of the sole. Corrective exercises should be begun as soon as the child is old enough to carry them out.

Metatarsalgia may or may not be accompanied by pain and disturbed mechanism of the longitudinal arch. Mild attacks may be cured by contrast foot baths, rest and strapping, but some form of support is usually needed. Small sponge rubber or felt pads placed just posterior to the metatarsal heads give relief in many cases. The accurate placing of the pad is of utmost importance. More resistant cases require a metatarsal bar or interior heel. The bar is about ¼ in. thick, ½ in. wide, is made of sole leather and is best put in the split sole if the shoe is so designed as to allow it. Several varieties of anterior heels have been designed, but, like the bar, all work on the principle of transferring weight farther posterior on the metatarsals.

Bunion may be due to shoes too short or heels too high. In milder cases, removal of the exostosis on the medial side of the first metatarsal sometimes is sufficient. In more severe or longer standing cases, a wedge osteotomy of the first metatarsal is done from the medial side after the exostosis has been removed. Contracture of the conjoined tendon is remedied by tenotomy at its attachments to the base of the first phalanx on the lateral side; the toe is splinted for three weeks in the corrected position and a metatarsal bar should be worn until repair re-

(*To page 550*)

Rupture Of The Uterus

A Report of Two Cases

Richard L. Pearse, M. D., Durham, North Carolina
George H. Derieux, M. D., Santa Barbara, California

RUPTURE of the uterus is one of the gravest complications of pregnancy. According to Sheldon the mortality rate is 42.3 per cent for the mother and 82 per cent for the fetus. In his series of 26, 65 per cent resulted from the trauma of an operative delivery through the pelvis, usually version and extraction. One of the patients whose case follows suffered rupture of the uterus from the injudicious use of pituitrin in the second stage of labor. The other's rupture was truly spontaneous. This represents the rarest sort. The patient had not had a previous section, which is the usual cause. Both patients were multiparae; in Sheldon's series only two were primiparae.

Case 1.—A 34-year colored, married woman was brought to the emergency ward of Duke University Hospital at 1:00 a. m. on September 1st, 1935. She was para 9-1-8. Her last menstrual period had been in November, 1934. Her pregnancy had been uncomplicated and she went into labor spontaneously in her home six hours before admission. After five hours (an hour before admission) the head appeared on the perineum and the membranes ruptured. The attending physician administered six minims of pituitrin subcutaneously and turned to wash his hands preparatory to delivering with Simpson forceps. The patient suddenly had a terrific pain and labor ceased. The presenting part disappeared. A bloody discharge appeared at the vulva and the symptoms of shock were manifested promptly. She was hurried to the hospital, a distance of 12 miles.

On admission her pulse was 132, respiration 24 and blood pressure 70/40. Temp. was not taken. She was an obese colored woman in profound shock. A large fetus was palpable with astonishing ease under the skin of the left upper abdominal quadrant. There was dullness in both flanks. Hemolobin was 63 per cent (S), red count 3,440,000, white count 20,800, urine normal.

She was given 1500 c. c. of 5-per cent glucose intravenously and under ether anesthesia a left salpingo-oöphorectomy and total hysterectomy were done. The abdomen was drained vaginally. The uterus was found to be torn through from the left round ligament to the vagina. The left uterine artery had been so fragmented that it could not be positively identified. A large, dead female fetus and the placenta were loose in the abdominal cavity; about 1500 c. c. of uncoagulated blood was in the flanks.

A transfusion of 500 c. c. of citrated blood was given in the course of the operation. She left the table in very poor condition, and never recovered from the shock in which she arrived at the hospital. Her blood pressure remained low and she put out only a few drops of urine. She was again given 500 c. c. of citrated blood and 1000 c. c. of 5-per cent glucose. At 10:10 the morning of admission she died.

At necropsy nothing remarkable was found except massive hemoperitoneum and a huge retroperitoneal hemorrhage starting from the left broad ligament. An incidental finding was cholelithiasis. The uterus showed generalized edema and there were minute hemorrhages at the site of rupture. The fetus showed the usual changes associated with asphyxia.

Case 2.—A 33-year, colored, married woman entered Duke University Hospital at 5:00 a. m. January 22nd, 1938, in active labor. She was para 7-0-7. Her last period had been May 14th, 1937. She had received no prenatal care; her pregnancy had been uncomplicated except for vertigo and headache at times during the terminal trimester. She went into labor at 9:00 p. m., January 21st. At 10:00 p. m. she had a sharp pain over the fundus and lost "a quart" of blood by vagina. The pain persisted. At 4:00 a. m. she was seen by a physician who did not examine her and gave no drugs. He advised immediate hospitalization.

The patient had sustained a complete perineal laceration eight years previously. She had seven living children—the youngest two years, the oldest 15 years old. She had had a spontaneous delivery in Duke University Hospital on September 12th, 1933. At that time her blood pressure was 170/110 to 130/90. Her urine was negative.

Her temperature was 36.2° C., pulse 110, respiration 24 and blood pressure 116/72. The optic fundi were normal. The heart and lungs were normal. The fundus rose 31.0 cm. above the symphysis. The fetus was R. O. A. and fetal heart beats 140, best heard in the right lower quadrant. A

dark bloody discharge issued from the vagina. Pelvic measurements were normal. Rectal examination showed a severe old perineal laceration extending 2.5 cm. up the rectovaginal septum. The cervix was two-and-a-half fingers dilated.

Hemoglobin was 48 per cent (S), red count 2,700,000, white count 10,100, and the urine contained 3-plus albumin and many hyaline and granular casts. Wassermann and Kahn tests were negative.

The diagnosis of partial separation of the placenta was made. Since the patient was a multipara partly dilated and having effective pains the decision was to deliver her normally. She was given a transfusion of 500 c. c. of citrated blood and 16.0 mgm. of morphine. At 11:00 a. m., the cervix was fully dilated and the patient was taken to the delivery room. She was given gas with her pains. No examination was made. As the head appeared at the vulva she had a severe pain, and labor ceased. The fetal heart sounds were lost. A stillborn female fetus, weighing 2350 gms., was delivered with outlet forceps. The placenta and several large, dark clots appeared immediately. Symptoms of severe shock appeared, the uterus could not be felt through the abdominal wall, and a profuse external hemorrhage occurred. Ergotrate, pituitrin and glucose were given by vein; the uterus was quickly packed and the patient taken to the operating room where a table was ready. The diagnosis of Couvelaire uterus was made.

Under ether anesthesia the uterus, both tubes and both ovaries were removed. The peritoneum was full of clotted blood. Both sides of the uterus were inky black from extravasated blood. There was a rent 12.0 cm. long in the right side of the uterus extending into the cervix. The packing projected through this into the peritoneum. The intact right uterine artery was drawn across the rent like a violin string. The packing was withdrawn from below and the operation completed as rapidly as possible. The peritoneum was drained vaginally, and 500 c. c. of citrated blood and 750 c. c. of normal saline given on the table.

The patient left the table in poor condition and was given 500 c. c. more of citrated blood. She rallied and was put in Fowler's position and given Ochsner's treatment. On January 24th she had three stools and was given 625 c. c. of citrated blood. Improvement was steady and on January 29th and 30th the vaginal drains were removed. The abdominal wound healed by first intention. The patient's temperature and white count rose ominously and on February 1st, a massive pelvic cellulitis was discovered by rectal examination. Fluids were forced and sulfanilamide started February 8th. The next day she left against advice.

At home she began to vomit and a severe diarrhea developed. She reëntered on February 10th much dehydrated and toxic, temperature 36.5° C., pulse 120, respirations 20 and blood pressure 120/64. A sterile pelvic examination with no anesthesia resulted in the digital opening of an abscess in the left fornix with the escape of 25.0 c. c. of pus.

A Wangensteen apparatus was installed and parenteral fluids and glucose given. The n-p. n was 43 mgm. per cent on admission. The use of the Wangensteen apparatus was discontinued on February 13th and improvement was steady and rapid. On February 13th and 15th she again received transfusions of 500 c. c. of citrated blood. On February 14th n-p. n. was 68 mgm. per cent, urine negative except for a few white cells. On February 21st, the patient was discharged with slight induration at the site of the abscess.

She was seen again on April 5th, 1938. Locally the result was excellent. Blood pressure was 240/103, hemoglobin 76 per cent (S), urine contained a trace of albumin, n-p. n. was 43 mgm. per cent. Attempts to locate the patient subsequently have failed.

The removed uterus had a tear through the cervix into the fundus for a distance of 12.0 cm. The uterine musculature was heavily infiltrated with small areas of hemorrhage. The tubes and ovaries were not noteworthy.

Discussion

The first patient undoubtedly suffered a rupture of the uterus as a result of the administration of pituitrin in the second stage. The fetus had been forced through the wall of the uterus with such explosive violence that the uterine artery was literally blown to bits. The use of pituitrin to hasten the second stage of labor should be unqualifiedly condemned. Pituitrin should be used only to initiate labor, and then in fractional doses, rarely in cases of uterine inertia and in the management of the third stage of labor. The fetus should never be projected through the birth canal like a bullet through a rifle barrel. Both fetus and mother may sustain serious injuries. Pituitrin should never be given in the presence of malpositions or disproportion.

The cause of rupture in the second case is not clear. Presumably, she had a toxic separation of the placenta. The intramuscular hemorrhage due to the uteroplacental apoplexy so weakened the wall that it ruptured under the stress of the contractions of the second stage. Here the rupture was not violent and the uterine artery was not

(To page 550)

Hemoglobin Determinations*

CLAYTON E. ROYCE, M. D., Jacksonville, Florida

ACCORDING to Peters and Van Slyke's *Interpretations of Quantitative Clinical Chemistry*:

The volumes of oxygen and carbon dioxide carried to and from the tissues to maintain combustion are many fold the amounts that could be taken up in physical solution by the blood. In the resting man the minimum gas exchange involves about 250 c. c. of oxgyen absorbed and 200 c. c. of CO_2 produced per minute. With strenuous muscular exertion these amounts may be increased tenfold. To carry 2500 c. c. of oxygen in physical solution about 1200 liters of blood saturated with air of alveolar oxygen tension would be required. The heart at its greatest activity is probably able to pump only about 25 liters per minute. It is evident that if our activities were dependent on oxygen that we can transport in physical solution in our blood, those activities could be only about one-fiftieth as great as Nature now permits us, and evolution of the higher animals could hardly have occurred. At some epoch in animal development, however, there appeared an extraordinary substance in the circulating fluid that enabled the latter to take up from the air a hundred fold the amount of oxygen which could be absorbed by simple solution, and yet held the vital gas so loosely that the oxygen-thirsty tissues could, if they needed, take it all as it passed through their capillaries. At the same time this substance furnished alkali to combine with all the carbonic acid that could be liberated in periods of most vigorous activity, yet so controlled the combination that when the blood reached the lungs the surplus CO_2 was free to escape instantly into the atmosphere. That substance was hemoglobin.

With these words the writers preface 115 pages of exhaustive discussion on the relations of hemoglobin and oxygen in the normal and pathologic physiology of man. If from their intricacies we shall be able to extract a few simple clinical truths this effort will be justified.

Perhaps we may all agree that color is the most easily appreciable of the physical characteristics of the blood. We are constantly asking in regard to the blood, "Is it red enough?" The underlying question of deeper significance relates to the oxygen-carrying capacity. Is the blood carrying sufficient oxygen? Since hemoglobin makes the blood red and is also the oxygen carrier it should answer the second question to find how much hemoglobin is present. Under modern therapy the question still presents itself, regardless of the color of the blood, "Will it carry enough oxygen?"

How red ought the blood to be? For many years it was taught that the right redness of blood was that found in a healthy young adult male. Standards varied. Different forms of measurement were used. One hundred per cent by one method was considered to be 13 grams, by another method 17 grams, per 100 c. c. of blood. Some reason for these discrepancies is found in a technical difficulty which still exists. No one knows just how much oxygen will combine with a gram of pure dry hemoglobin, for the reason that hemoglobin in its pure form is so unstable that it will not remain pure long enough for the necessary experiment to be carried out.

In 1900, the English physiologists, Haldane and Smith, introduced the use of the oxygen capacity of the blood as a standard for hemoglobin determination and expressed their results obtained on 12 normal adults as 18.5 c. c. of oxygen for each 100 c. c. of blood. Subsequently, from 1923 to 1928, Haden, Osgood and Wintrobe, working in this country, have obtained the figure of 20.9 volumes per cent as the oxygen-carrying capacity of adult humans. Considering the maximum activity of the heart (25 liters per minute) we see that the hemoglobin will, if necessary, enable it to supply over 5000 c. c. of oxygen per minute of gaseous exchange.

Haden and Osgood recommended the expression of hemoglobin in grams rather than as percentages. Back in 1894, Hufner, using the hemoglobin of ox-blood, found that one gram of it combined with 1.34 c. c. of oxygen.

Admitting of necessity its inexactness, it was the best available figure, and the use of it in 20.9 c. c. oxygen capacity gave 15.6 grams of hemoglobin as a normal amount per 100 c. c.

Up to this point in our discussion hemoglobin has been considered as of healthy adults without regard to barometric pressure which must prove an important factor, since it is well established that living at high altitudes demands increased oxygen-carrying facilities. An adequate blood in Albany might, if uncompensated, prove to be a mild ane-

*Presented to the Chattahoochee Valley Medical Association, July, 1939.

mia in Denver. Our standards and methods are still uncorrected for altitude.

Age and sex make a difference, too. Much consideration has been given this phase and to this I wish especially to direct your attention. In 1916 Williamson studied the hemoglobin of 919 individuals of all ages and both sexes. His method was spectrophotometric, using as standards solutions of recrystallized hemoglobin. This he did without regard to the instability of hemoglobin, so that his figure of 16.0 grams hemoglobin per 100 c. c. of the blood of the healthy male is open to the same unanswerable question noted above. However his data as to the variability due to age and sex are unchallenged. His figure 16.9 has been used to obtain a factor for converting grams per cent into volumes per cent.

$$\frac{20.9 \text{ (volume per cent)}}{16.9 \text{ (grams per cent)}} \text{ equals } 1.235$$

or the c. c. of oxygen combining with one gram of hemoglobin.

Williamson's data on 919 cases combined with those of Haden, Osgood and Wintrobe, and Miller —already referred to—and the studies of 103 infants under two years of age by Appleton, with figures on 12 infants by Haden and Neff, have been combined by Peters and Van Slyke and expressed as a table and a chart.

NORMAL HEMOGLOBIN CONTENTS OF HUMAN BLOOD: EFFECTS OF AGE AND SEX

(*From data of Williamson, Haden, and Appleton*)

Age	Oxygen Capacity			
	Males		Females	
	Volumes per cent		Volumes per cent	
1 day	32	4	32	4
2 -3 days	29	4	29	4
2 -3 days	29	4	29	4
9 -13 days	23	4	23	4
2 -8 weeks	20.5	4	20.5	4
3 -5 months	17.5	3	17.5	3
6 -11 months	16.0	3	16.0	3
1 -2 years	15.5	2	15.5	2
3 -5 years	16.4	2	16.4	2
6 -10 years	17.3	2	17.3	2
11-15 years	18.0	2	18.0	2
16-60 years	20.7	2	19.0	2
60-70 years	19.9	2	19.0	2
70 years	19.2	2	18.7	2

This makes more pertinent the question; "How red ought the blood to be?" The normal hemoglobin is seen to vary greatly with age and sex and unless the nature and extent of such variations are recognized it is impossible to interpret hemoglobin determinations. If percentage expressions are to be used they should be based on the normal for the subject's age and sex in the same way metabolism results are expressed. For hemoglobin the grams per cent obtained from the comparator (Newcomer's standard disc and a Dubosq type colorimeter) is multiplied by the factor 1.235, the result being the volumes per cent. If this is multiplied by 100 and the product divided by the volumes per cent normal for the subject's age and sex, the quotient is the subject's hemoglobin in percentage of his or her normal hemoglobin.

Especial attention should be given to these varying factors for converting volume per cent oxygen capacity to grams per cent and vice versa. Therein lies much of the discrepancy found in hemoglobin figures of medical literature. The older reports have more apparent harmony. Hemoglobin was always so much per cent. Today we read so much per cent (Dare) or so much per cent (Sahli) or perhaps so many grams. This has an air of definiteness. Grams per hundred ought to be grams per hundred in any language. Unfortunately however 20.9 volumes per cent oxygen capacity may be translated into 15.6 grams per hundred or 16.9 depending on which factor is used to make the translation. The divergences may be reconciled in terms of percentage of normal for the subject's age and sex if we know which factor was used. When the grams arrived at by use of the comparator (most instruments are now calibrated to read directly in grams) are multiplied by the factor used by the manufacturer in arriving at grams per cent the resulting volumes per cent will be identical even though there is considerable difference in the number of grams.

For example: 11.5 grams for an instrument in which the factor 1.34 was used in calibration yields, by multiplication, 15.4 volumes per cent oxygen capacity; whereas another instrument calibrated by the factor 1.235 yields from 12.5 grams by multiplication, the same volume per cent, 15.4.

Obviously if the factors were exchanged, a wide variation of percentage would result. Since both standards are in wide use and we have no means of deciding that one is more nearly correct than the other, it would seem that the least we can do toward reconciling the records and giving the other fellow a chance to translate our results into his language, is to parenthesize after each hemoglobin figure the factor by which our instrument was calibrated.

Another fact seldom given proper value is the known variation in hemoglobin values from hour to hour. A difference between maximum and minimum hemoglobin content of 19% is common, and greater variations may occur. Greater common variations are witnessed in children. These are due possibly to the rhythmic contractions of the spleen which may act as a reservoir for blood or at other times expel it into the general circulation. It is obvious that single observations of minor changes from usual normal standards must be interpreted with caution.

Until recently the determination of hemoglobin considered only reduced and oxy-hemoglobin. With the advent of sulfanilamide therapy more confusion has been introduced into determining the really important truth—*i. e.*, the oxygen-carrying capacity. This may be determined gasometrically or the amount of sulphemoglobin which may result from sulfanilamide treatment may be determined spectroscopically. Bloem states that sulphemoglobin may be detected when 4% of the hemoglobin is affected and that cyanosis appears when 30% of the hemoglobin is affected. Of much more clinical importance is the routine every-two-to-three-day check on hemoglobin and red cells while using sulfanilamide. This for the reason that when hemoglobin drops to less than 5 grams no cyanosis can occur, and the formation of sulphemoglobin might deprive the patient of his remaining oxygen capacity. If the hemoglobin and red cells remain normal, appearance of cyanosis is a sign for discontinuance of sulfanilamide.

In summary, hemoglobin determinations are in effect an effort to inform ourselves of the oxygen-carrying capacity of the blood. For convenience these are done by use of color comparators. If percentages are to be made the media of record they should be in terms of normal for the subject's age and sex. Whether the result is recorded in grams or by percentage it should be accompanied by the proper factor showing its relation to oxygen capacity. Normal diurnal hemoglobin variations must be considered in evaluating the result. The effect of sulfanilamide therapy on the hemoglobin demands attention and particular attention must be paid to the relation between hemoglobin content and cyanosis.

—1022 Park Street

Uterine Rupture

(*From page* 547)

fragmented, nor did the uterine contents escape into the perioneal cavity. The patient's life was saved because of the availability of large quantities of blood for transfusion and because of the promptness with which it was possible to perform hysterectomy. It is improbable that her azotemia was due to the number of blood transfusions received, as she never suffered a delayed or immediate reaction and at no time were showers of red cells and casts detected in her urine after a transfusion.

The treatment of such cases of rupture of the uterus is hysterectomy with drainage. A helpful technical procedure is to repair the rent quickly with either large interrupted sutures or towel clips. This reconstructs the pelvis and renders damage to the ureter less likely in the course of the hysterectomy. In cases of rupture associated with old cesarean section scars the blood loss may be minimal and the rupture small. It may not be necessary to perform hysterectomy; a simple repair suffices.

The authors thank Drs. F. B. Carter and R. A. Ross on whose services these patients were for permission to publish these cases.

Foot Ailments

(*From page* 545)

mains. Lateral bunions seldom require more than removal of the exostosis.

High arches give more trouble than low. Associated usually with hammer toes and plantar warts or callosities. Later the anterior arch gives way and there is metatarsalgia with cramping of the muscles of the feet. The feet are shiny and atrophic. Conservative treatment begins with a low, broad-heeled shoe made of soft leather. A metatarsal bar is applied which tends to cause flexion of the toes. Exercises and hot soaks followed by alcohol massages give considerable relief. The toes should be manipulated downward and the foot brought into extension while the toes are bent down. Curling the toes down over the edge of a board or stair-step while bearing weight is of some benefit. A small metatarsal pad is sometimes added to the inside of the shoes. Radical treatment is cutting the plantar fascia from its posterior attachment to the os calcis and applying a cast with the foot dorsiflexed to obliterate the arch as much as possible. It may be necessary to cut the tendons of the short toe flexors.

If the hammer toes do not respond to manipulation, tenotomy of the flexor tendon, lengthening of the extensor tendon and arthrodesis of the proximal interphalangeal joints is the procedure of choice.

March foot is a fracture of one of the middle metatarsals in a weak foot and not caused by trauma, with swelling and tenderness over the fracture, which may be easily overlooked in routine x-rays. Excess callus may lead to a mistaken diagnosis of sarcoma and amputation of the foot. The treatment of choice is absolute rest. Since this canot usually be obtained, the foot is strapped with pad support.

Heel pain on the posterior aspect is occasionally seen in boys between 9 and 14 years of agae. Due to an irritation of the growth center of the calcanean metaphysis owing to its severe muscular exertion applied through the Achilles tendon upon the apophysis of the heel. x-rays are diagnostic. Treatment is complete rest in a cast in severe cases; going barefoot is simplest in moderate ones; in others, raised heel, limited activity, removal of shoe counter, and diathermy will suffice.

Tenderness on the posterior part of the heel may also be due to a bursitis, relieved by removal of the counter. Pain on the plantar aspect of the heel is most commonly due to bursitis or calcaneal spur; *removal of the spur should be done only after conservative measures fail,* because *the spur often recurs, larger and more painful than before. Conservative* treatment of these two conditions begins with sponge rubber heel pads or nest depressions in the shoe. X-ray or diathermy usually cure the bursitis.

With a little effort, physicians should treat the majority of feet successfully.

Many unqualified persons give advice as to exercise. The individual possesses a fairly good guide in his sense of fatigue.—*Christian.*

High Lights of the First American Congress on Obstetrics and Gynecology

Otis Hunter Jones, M. D., Charlotte, North Carolina

I Diabetes in Pregnancy

Dr. Henry J. John of Cleveland, reported glycosuria in pregnancy in 50% of the cases. Most of the time it is lactose, but some of the cases are diabetes. Most practical in a blood sugar test taken two hours after a carbohydrate meal. Treatment of diabetes here differs in no way from the established diabetic routine. It is essential to avoid hyperglycemia as it is apt to produce a large baby, fatal hyperinsulinism in the baby, or hypoglycemia and a dead fetus.

II Tuberculosis in Pregnancy

Dr. Edwin James of Saranac Lake, N. Y., emphasized that with proper care—usually institutional—interruption of pregnancy is seldom indicated for health reasons alone, but that social and economic factors may make its continuation hazardous.

III Abortions

Dr. David Hillis, Professor of Obstetrics at Northwestern, stressed conservatism. At the Cook County Hospital, septic abortions are never treated by curettement until temperature has been normal five days. Management during this time includes routine culture study from vagina or cervix and the use of quinine and pituitrin in small doses, fluids and transfusions and sulfanilamide are given. In the non-septic cases active interference is not necessarily a harmful procedure but in a large proportion of these the products of conception will be discharged spontaneously although a small number may later require a curettement.

Most discussors agreed as to treatment of the septic cases, but considered curettement in the non-spetic cases an optional procedure when done by a good obstetrician, many that it is usually indicated.

One of Dr. Hillis' associates advised posterior colpotomy followed by gauze packing, to localize pelvic peritonitis.

Dr. Elizabeth C. Tandy, of the Department of Labor, stated that 10,600 mothers died in childbirth from associated complications in the past year (the lowest number ever reported) 25% resulting from criminal and other abortions.

Dr. Philip F. Williams of Philadelphia declared that the lives of 6000 mothers could be saved every year by prompt and proper medical care.

IV Preventive Aspects of Puerperal Infections

Dr. Benjamin P. Watson, Professor of Obstetrics at Columbia, stated that routine vaginal culture of several thousand patients taken at the onset of labor revealed hemolytic streptococcus in 3.4%. Although these cases show only a slightly higher incidence of infection than non-carriers, they should be isolated because of the possibility that the organisms they carry may be virulent for their neighbors.

In addition, the labor room staff should have routine nose and throat cultures, and if found positive for hemolytic streptococcus, should be excluded from duty until repeated cultures are negative. Also, the fewer people coming in contact with the patient in the labor room the less risk of exogenous infection. A four-ply mask should always cover the nose as well as mouth. Nurses doing puerperal dressings should observe strict asepsis, as well as wear masks. Strict isolation of infected, or potentially infected patients should be done. A vaginal examination during labor, if carefully done, carries no greater risk of infection than a rectal examination.

V Diagnosis and Treatment of Early Ectopic Pregnancy

Dr. John Rock, Harvard, said that early diagnosis and prompt removal of ectopic pregnancies would save the lives of 450 women each year in the United States. Delay in laparotomy is seldom warranted for differential diagnosis and never because of religious scruples.

VI Operative Obstetrics

Dr. S. A. Cosgrove of Jersey City, stated that there should be a reduction in unwarranted operations. There is a direct relationship between number of operative interference and number of deaths. Lack of judgment as to indications for, and choice of, operations and lack of competence to perform operations is the explanation. The remedy lies in regulatory and educational efforts.

VII Occiput Posteriors and Breech Presentations

Dr. Arthur H. Bill, Professor of Obstetrics and Gynecology at Western Reserve, does rotations, preferably with forceps, in cases of persistent occiput posterior with head in the pelvic cavity, before attempting delivery. If the head is not through the inlet, he does a version and breech

extraction. The Bill technique carries the forceps handles through a wide arc without traction.

Drs. W. E. Caldwell and H. C. Moloy of Columbia, emphasized the association of occiput posteriors with anthropoid type of pelvis. They attempt rotation, manually or with forceps; but if not easily completed, allow delivery as a persistent occiput posterior.

Drs. Caldwell and Moloy's pelvic classification based on stereoscopic x-ray pelvimetry is being adopted by many schools and hospitals. They show that Dr. Ball's volumetric measurements (or measuring size of the pelvis and the size of the head and thus working out mathematically the prognosis as to ability to deliver) cannot be relied upon.

Those interested in the complete contribution of Drs. Caldwell and Moloy will find it in the transactions of the N. C. State Medical Society for 1938, as it was my privilege to present their work in full to the State Society in that year.

Dr. Pierce Rucker of Richmond advised external version in all breech presentations between the 34th and 38th week of pregnancy, if the condition is recognized. He made a plea for less haste in breech deliveries.

VIII Uterine Inertia

Dr. W. C. Danforth, Professor of Obstetrics and Gynecology at Northwestern, stated that calcium gluconate intravenously is good for uterine inertia. Dr. Brodie Nalle of Charlotte has advocated this procedure for years.

IX Method of Delivery and Fetal Mortality Rates

Dr. H. C. Miller, Yale pediatrician, showed from 3,500 cases that there is a lower fetal mortality rate with prophylactic or low forceps than with spontaneous delivery. Mortality increases with the midforceps group and especially with high forceps and with versions. There is no difference in the mortality rate in premature deliveries by cesarean section and vaginally in corresponding weight groups.

X Placenta Accreta

Dr. Edward Schuman of Philadelphia emphasized that hysterectomy is the treatment for placenta accreta.

XI Obstetrical Analgesia, Amnesia and Anesthesia

Dr. Nicholas J. Eastman, Professor of Obstetrics at Johns Hopkins, stated that all known analgesic and amnesic drugs depress the respiration of the infant at birth, which may decide the fate of a premature infant. No form of obstetric anesthesia or analgesia is suitable in all cases for mother or child. The perfect analgesic has not been discovered. As Dr. Lull of Jefferson Medical School said, "our experience has been sufficient to warrant the judicious use of various drugs to relieve a woman during labor." For example, Rucker of Richmond favors sodium amytal; Damon of New York and Irving of Boston, nembutal, with the addition of morphine or scopolamine at times; some prefer other of the barbiturates; Bill of Cleveland still uses morphine and scopolamine; Kane of Washington and Bartholomew of Atlanta prefer paraldehyde.

XII Endocrines

Dr. Emil Novak of Johns Hopkins stated that: 1) only ovulating girls have dysmenorrhea; 2) in adolescence, functional bleeding is due probably to lack of ovulation. At the present time Dr. Novak is using testosterone (male hormone) as the drug of choice in treating dysmenorrhea and in functional bleeding. Dr. Novak and most endocrinologists regard the therapeutic dose as entirely safe.

Dr. Edward Davis of the University of Chicago favors pregnant mare's serum in sterility due to lack of ovulation, and for those women whose ovulation is sub-par.

Dr. E. C. Hamblen of Duke stated that his work with pregnant mare's serum did not show that it produced ovulation, and thought we should take to the use of testosterone very cautiously.

XIII The Newer Concepts of Ovarian Tumors

Dr. Howard Taylor, Jr., of New York City stated that follicular and corpus-luteum cysts are not called ovarian tumors because they are usually physiological. Several types of ovarian tumors, formerly classified as carcinomas or sarcomas, must now be recognized as not highly malignant, notably the granulosa-cell tumor, which occurs chiefly before puberty or after the menopause, and is distinctly a feminizing growth, that is excessive estrogenic activity. The arrhenoblastoma, in contrast, is a masculinizing type of growth. The patient takes on male characteristics, and the urine contains large amounts of the male hormone. This is a very rare tumor. The disgerminoma is the tumor prone to develop in pseudohermaphrodites. It is not determined whether or not this tumor has specific sex influence. Finally, the Brenner tumor, which has no hormonal action, and of which a preoperative diagnosis is impossible.

Dr. Taylor believes that radiation, with surgery, increases the percentage of five-year cures in ovarian cancer.

XIV Sulfanilamide and Sulfapyridine in Obstetrics and Gynecology

According to Dr. Perrin Long of the University of Maryland: 1) practically all sulfanilamide taken is absorbed, while only one-half of the sulfapyridine taken is absorbed; 2) 95% of sulfanila-

mide is excreted in the urine in 24 hours—thus it is a good urinary antiseptic. Sulfapyridine is excreted much more slowly. Also, renal calculi may result from sulfapyridine, and occasionally renal failure; 3) sulfapyridine is conjugated in the body tissues and may not be available in a utilizable form; 4) sulfapyridine is the drug of choice for use against the pneumococcus, the staphylococcus and Friedlander's bacillus; in gonococcal infection, one is not yet able to say which is the drug of choice. If no response from sulfanilamide in ten days, change to sulfapyridine; 5) in hemolytic streptococcic infections, if sulfapyridine is absorbed, it is as effective as sulfanilamide; 6) sodium sulfapyridine is the only preparation that can be given intravenously—this preparation cannot be sterilized, but this is of no consequence; 7) there are more toxic manifestations from sulfanilamide than from sulfapyridine, especially cyanosis, nausea and vomiting.

XV Exhibits

Of the many instructive exhibits, time will permit the discussion of only a few.

A "Studies in uterine motility during late pregnancy and labor"—by Dr. Douglas P. Murphy of Philadelphia.

Tracings taken with Lorand tocograph, an instrument for recording the uterine contractions, showed that: 1) pitocin in doses of 1 to 1½ minims produced normal-like uterine contractions, in larger doses tetanic contractions; 2) morphine depresses the fetus but does not depress uterine contractions.

B Dr. Fred Falls of Chicago had tracings showing that; 1) morphine in ¼-grain dosage definitely increases uterine contractions. He had not tried morphine in 1/6-grain dosage; 2) progestin (corpus luteum) definitely inhibits uterine contractions.

C Stored Blood.

1. "The collection of and preservation of placental blood for transfusion purposes"—by Dr. Charles Gwynn and associates of Syracuse University. The technique consists in collecting blood from the placenta as soon as the cord has been cut, simply by allowing all of the blood in the placenta to run out of the cord into a flask. Serological test and typing are done, and the flask to which has been added preservatives, is labeled and stored in the icebox until ready for use. It is not usually kept over 3 months. Certain requirements must be met before blood can be collected this way, such as, the mother must be free from transmissible disease, membranes must not be ruptured over 48 hours, no obvious infection, the baby must be at or near term, free from asphyxia pallida and finally the presentation must not be breech or transverse.
2. "Plasma administration"—by Drs. John Elliott and H. H. Newman, Salisbury, N. C.

Plasma's advantages over whole blood include: immediately available in emergencies, keeps well at room temperature, can be transported readily, can be given without cross-matching, can be given intramuscularly and subcutaneously (its rate of absorption being approximately that of physiological salt solution), it can be stored for a much longer period than whole blood (the exact safe storage period has not been determined as yet—has been used after a year's storage); finally, there are certain conditions in which plasma is of more benefit than is whole blood—traumatic shock without hemorrhage, burns, kidney conditions with edema and hypoproteinemia due to loss of plasma through kidneys, in infections the hemoglobin being normal (the plasma should be fresh in this case). It can also be used in hemorrhage etc., until whole blood can be obtained. Over 200 plasma infusions have been given without reactions.

Dr. William Studdiford, Professor of Obstetrics and Gynecology at New York University, in his talk on Postpartum Hemorrhage said that their experience at Bellevue was that stored blood is not as efficacious as fresh whole blood.

Zoroaster's Scale of Doctors' Fees

(E. E. Cornwall, Brooklyn, in *Med. Times*, Oct.)

"A healer shall heal a priest for a blessing of the just; he shall heal a master of a house for an ox of low value; he shall heal the lord of a borough for an ox of average value; he shall heal the lord of a town for an ox of high value; he shall heal a lord of a province for the value of a chariot and four.

"He shall heal the wife of a master of a house for the value of a she ass; he shall heal the wife of a lord of a borough for the value of a cow; he shall heal the wife of a lord of a town for the value of a mare; he shall heal the wife of the lord of a province for the value of a she camel.

"He shall heal the heir of a great house for the value of an ox of high grade."

It would appear that Zoroaster graded the fees of the physicians according to the standing and wealth of the patients, and that the fees for women were smaller than those for men; that the clergy then, as now, were regularly on the free list. It is interesting to note that among this early Aryan people, the currency of trade was estimated in terms of cattle, thus harking back to the pastoral period of Aryan history. We get a distant echo of this Aryan pastoral period in our English word, pecuniary, of Latin-Aryan origin, derived from the Latin word, pecus, which means herd.

Bilharziasis.—It is said that 2/3ds of the population of Egypt is infested with *Bilharzia*.

SURGICAL OBSERVATIONS

OF
DAVIS HOSPITAL
Statesville

Transurethral Prostatectomy

As more and more partial prostatectomies have been done by the transurethral method, the technique has been made ever better and better.

In the original resection just the obstructing portion of the prostate gland was removed. This enabled the patient to void very well; but the greater part of the gland was left, with the possibility of recurrence or the development of cancer.

Naturally a suprapubic or perineal prostatectomy, with removal of the entire gland, has certain advantages over the transurethral method; however, the lower mortality of the transurethral procedure and the greater mortality and longer period of hospitalization for other methods make the transurethral resection the method of choice for most patients.

Recent improvements in the instruments for prostatic resection and further improvements in the technique now enable us to remove still more of the substance of the prostate, until almost nothing is left but the capsule.

The advantages are great. Removing the greater part of the prostate gland reduces the chance of recurrence of obstruction, and of the development of chronic infections processes or of malignancy

The great problem in prostatic surgery is getting the patient to come in *before* there has been serious damage to the kidneys, ureters and bladder and *before* the patient's general health is impaired to the point where any surgical procedure is more likely to be unsatisfactory. While almost miraculous results are obtained in many cases where the patient has become greatly debilitated, even almost moribund; yet this is the type of patients which gives maximum mortality and maximum poor results—no matter what is done.

When the patient's general physical condition is bad, the kidney function greatly impaired, and there is a chronic pyelitis with dilatation and chronic infection of the ureters, chronic cystitis with thickening and infiltration of the bladder wall, we cannot expect very good results.

The ideal time for treatment of prostatic disease is when the symptoms are definite but *before* permanent impairment of the body and renal function occurs and *before* chronic infection his developed.

The technique of transurethral prostatectomy has been so greatly improved in the past year or so as to afford results to justify the most enthusiastic forecasts of a few years ago.

Abdominal Scars

It has been our custom when operating upon the abdomen of a patient who has had a previous abdominal operation to excise the scar of the old incision at the time of the operation. This removes the scar which is present and prevents multiple scars, which are sometimes painful—at least they are distressing to the average patient.

Whether the incision is made through the rectus muscle or in the midline, it is not difficult to excise the scar of the old incision and make the incision at the site of the previous incision. There are, of course, times when the new incision must be made elsewhere, and in such case we would not attempt to remove the scar of the previous operation.

Surgeons should keep this in mind and, if practicable, make their incisions at points where resultant scars can be excised if a second operation is necessary.

The great majority of wounds heal by first intention. Often the scar is so small and fine that it can hardly be recognized as such. Sometimes the scar is wide, however, from the stretching which comes on gradually after a considerable length of time.

A keloid scar in which the scar is greatly thickened and which has taken on a tremendous growth of fibrous tissue is a distressing sequel to operation. Often it is necessary to excise these scars and give x-ray treatments to try to prevent the recurrence of the keloids.

The method of closure of an abdominal incision has a great deal to do with the healing and with the scar formation afterwards.

The most meticulous care should be exercised in closing any abdominal incision in order that the best possible healing may take place and so that the scar will be strong, firm and inconspicuous.

The location of the incision should always be carefully planned before the operation is begun and carried out in such a way that when closed it will present, a s nearly as possible, a straight line. The incision should always be watched carefully and any little complication that develops taken care of without delay and before there is a spread of infection or suppuration.

The closure of an incision so as to prevent traction on the scar itself until healing is well advanced should always be carefully planned and executed. The haphazard closure of an abdominal incision is a reproach to surgery.

Mild Types of Anemia

In the routine examination of patients a large number of mild anemias are found. In these cases there is usually found a subnormal number of red cells with hemoglobin proportionately reduced.

An example of this type is that of a woman who had a red count of 3,650,000 with hemoglobin of 62%. Very little trouble was found otherwise and her principal trouble was apparently a mild anemia. The symptoms being rather obscure and no positive findings otherwise, she was put on treatment for anemia. As the red count increased and the hemoglobin went up toward normal, the symptoms disappeared.

In many of these cases the usual treatment for anemia does not give marked results. Liver extract, reticulogen, iron and various other tonics, together with a liberal blood-building diet, fail to produce the expected improvement in symptoms or blood picture. In these cases one or two preliminary blood transfusions, followed by anti-anemia treatment, often enables patients to get a prompt start and go on to complete recovery. There is no doubt but that a blood transfusion is a powerful factor in the relief from these mild anemias. Nothing else seems to take the place of a transfusion under these circumstances.

While a careful search for every possible cause and source of the anemia should be made, in a considerable number no apparent cause is found, and in this type of anemia a blood transfusion, followed by anti-anemia treatment, gives the greatest improvement.

A mild anemia is a condition often overlooked or disregarded. Just what is the result of a long-continued mild anemia, is problematical; but it is my opinion that many intercurrent diseases and conditions develop after an anemia has been present over a long period of time.

Another problem is the standardization of the hemoglobin estimation. The red and white blood counts are usually very accurate when done by experienced technicians, but in the estimation of hemoglobin there is considerable discrepancy in the reports of different technicians, using different methods. Probably the best plan is for each institution to adopt one method for hemoglobin estimation and hold on to it.

One of the most commonly overlooked conditions is a mild anemia. More attention should be paid to this and treatment should be carefully prescribed and the patient informed of the importance of continuing the treatment until he is well.

A coarse woolen blanket is a common cause of infantile eczema.—*Zaborsky.*

DEPARTMENTS

TUBERCULOSIS

J. Donnelly, M. D., *Editor,* Charlotte, N. C.

Prevention of Infection in Tuberculosis Control

Some years ago the tuberculosis question began to be classed as a public-health problem, and since that time prevention of infection has been continuously stressed as the main element in eventual control of the disease. There seems to be no doubt of the fact that prevention of infection has been the chief factor in the reduction of the death rate in the last 25 or 30 years. That the modern treatment of the disease with the various forms of collapse therapy has had any direct appreciable effect on the death rate is doubtful, but the modern procedures in treatment are of vast importance in the program of prevention by rendering open cases of the disease non-infectious to contracts, especially children, and thereby reducing in number the potential future active cases. The sanatorium fills its most important role by providing a place where some of the infectious persons may be segregated, and the proper methods of treatment instituted to render them non-infectious. Furthermore, no patient should be discharged from a sanatorium until the sputum has been found repeatedly negative over a reasonable length of time.

One of the greatest handicaps to further and more rapid reduction of the death rate from tuberculosis is the apparent lack of concerted effort in the diagnosis of the disease in its earlier stages, when the chances for complete restoration of health are much more promising. In spite of the fact that "early diagnosis" has been the slogan for several years in tuberculosis prevention campaigns, three-fourths of the active cases of the disease when first diagnosed by the physician are moderately or far advanced. In most instances these cases have been sources of infection to their contacts for considerable periods of time, a danger which could have been much minimized by earlier diagnosis.

The first line of defense in the fight to further reduce the tuberculosis death rate is the general practitioner of medicine, and not the sanatorium or tuberculosis specialist. It is the general practitioner who has the opportunity to first see most of these cases, and it is his problem to recognize the infection in its earlier stages. It is true that minimal tuberculous infection in many instances

gives no absolute indication of its presence by either physical signs or symptoms, and that the x-ray film will often show minimal lesions in the lung before there are either physical signs or definite symptoms. To some general practitioners the facilities for x-ray examination are not accessible, although in the last few years a good many of the smaller hospitals have obtained x-ray machines, and some physicians practicing in the less populous communities have added serviceable x-ray outfits to their equipment.

There is no reason, however, why the tuberculin skin-test should not be more widely used, both in children and adults. The material can be easily obtained, is inexpensive, and the application requires no particular skill. Many of the pediatricians are helping materially in this work by adding the tuberculin skin-test to their routine procedures in examinations of children. Although a positive skin-test in most instances is not an evidence of active disease, it is an evidence that there has been exposure to infection, and it is necessary to locate the source of the infection if possible in order to prevent the dangerous re-infections.

One of the principal handicaps to tuberculosis prevention work is the rather general lack of thorough and systematic follow-up of the cases discharged as arrested. Many of these may become reactivated and again a danger to contacts. Such discharged cases should be under observation for several years, with examinations and x-ray films at rather frequent intervals, so that any reactivation may be recognized in its incipiency and proper methods instituted to prevent further spread of infection. This follow-up phase of the work, to be even moderately successful, must be to a large extent the job of the private practitioner. He can also do much in this cause by the skin-testing of all known contacts of active cases and the mass skin-testing of school children. Some authorities have lately advocated the omission of skin-testing of children of the grammar-school grades and the confining of the work to high schools. It is true that re-infection tuberculosis is rare before adolescence, but the finding of positive reactors among younger children, even though there may be a minimum of clinical disease, is of geat help in locating and isolating many dangerous sources of infection.

Eleven Cases of Trachoma treated by sulfanilamide (*Harley* et al, Mayo Clinic) or allied compounds have been reported. In each case marked objective and subjective improvement occurred. Four of the 11 patients were found to be intolerant to sulfanilamide. This intolerance necessitated continuance of treatment with neoprontosil with apparent continuation of good results.

SURGERY

Geo. H. Bunch, M. D., *Editor*, Columbia, S. C.

The Insane and the Feeble-minded as Donors for Blood Transfusions

The indications for blood transfusion have grown so that it is often impossible to get suitable donors, especially for indigent patients. Often life is at stake and the need urgent. Transfused blood is almost a specific for hemorrhage and for surgical shock. In the Philadelphia General Hospital 80 transfusions are given a week. In almost every city there is a list of professional donors who give blood for pay. Few are the lists of those willing to provide blood without compensiation. No one may get blood from a blood bank without arranging for replacement of the quantity withdrawn. The demand for blood for the poor is in every city so much greater than the supply that in Russia blood is withdrawn from suitable fresh cadavers for refrigeration and storage after having been mixed with sodium citrate solution. In America blood from fresh placentas is citrated and stored for transfusion.

There are in America as many hospital beds for the care of the mentally sick as there are for the care of the physically sick. The capacity of the hospitals for the insane is equal to that of the general hospitals. However, there is full occupancy of the beds in the asylum while there is only 70% average occupancy of the general hospital beds. So the asylum population is nearly one-third greater than that of the general hospitals.

Under modern conditions an inmate of an asylum, besides being sheltered, protected and adequately fed, is under constant medical supervision. Freedom from the mental strain and the physical hazard of the outside industrial world is conducive to long life. Feeble-minded children in an institution may live to ripe old age. The care and maintenance of this constantly enlarging population is a growing burden, without return, in every civilized commonwealth. The 5000 inmates in South Carolina cost the state approximately $1,000,000 a year. Of these unfortunates, mostly indigent wards of the state, there must be 500 young men in good physical health without constitutional or infectious disease. From these, after the Wassermann reaction has been proven negative, the blood should be typed and listed so that when there is a call for blood from a general hospital the patient's blood can at once be matched with that of inmates of that blood group, so that a suitable donor even in odd groups is always immediately available. When the blood is drawn and citrated it may

be sent promptly to the general hospital, even though this be in another city.

This plan is better than the blood bank which is in operation in many cities, for the blood furnished in fresh. All blood drawn is used. There is no loss from deterioration as in the bank where blood becomes unfit for transfusion after ten-days storage. The supply of donors is adequate, for a donor may be used again and again after a few weeks intermission and recuperation. Both the physician and the recipient may be assured that none of the characteristics of the donor can be transmitted through transfused blood.

The writer believes that the plan briefly outlined may be perfected in detail so that it may be in every way workable. By it many valuable lives may be saved that are now being sacrificed from inability to get blood for transfusion. The cost of its operation should be nominal. Injury to the donors should be neglible. They have nothing to do but to rest. We have available an adequate and a continual supply of blood for the needy. Let's use it.

INTERNAL MEDICINE

GEORGE R. WILKINSON, M. D., *Editor*, Greenville, S. C.

IS THE SPECIALIST ALSO A QUACK?

ASSUMING that a person has limited his practice to a fairly definite field, let us say to one of the legitimate fields for specilization according to accepted practice, and has had sufficient training and experience in this line to be termed a specialist, does arrival at this stage of medical attainment prevent him from being a quack? The writer is of the opinion that it does not.

Enthusiasm for one's particular field may be accompanied, legitimately, by a certain amount of salesmanship, which is necessary for the success of any enterprise. But, in climbing the ladder, one naturally makes a great many contacts and friends. These relationships may be distant or they may be close, but they are near enough to feel that when they are in trouble they can appeal to their friend for advice, counsel, and probably for treatment without considering the fact that such a physician has limited his work. This is all right on the layman's part, for he is not supposed to know the delimitations of the specialist, but the quackery comes in when the specialist does not handle the inquiry properly. Were some perfectly strange person to approach one about such a matter, the doctor would at once explain the limitations of his field of activity and give the names of the physicians qualified to render the service. But, alas for one's close friends, on whose shoulders one has perhaps founded his realm! Here the temptation is often too great and one tells them "come to see me" and essays to attend to many difficulties which are out of one's line, probably without remuneration, from the kindness of his heart, so to speak. How often is this done at a tremendous cost to his friend. And one's friends, so treated, may in the end become expensive enemies.

This is what the writer calls quackery, and the practice should be condemned. Why undertake to treat without cost, for friendship's sake, diseases which we do not treat for pay, when we know that there is someone better qualified, perhaps next door, to do the same job. After a person has been in one line of medicine for many years and has built up a clientele, his time is pretty well taken up and allows but small opportunity for the pursuit of studies even in one's own field. Therefore, it is only natural that unless one be a superperson, one will slacken down in his general knowledge of medicine and certainly cannot drag along with him much specific knowledge in the fields which he has forsaken.

The specialist has, from years of observation and maturity, a marvelous opportunity to direct friends and others who inquire where to go when in trouble. This advisory function, if judiciously discharged, should lead to an elevation in the standard of practice, the cultivation of friendship on a more permanent basis, and avoidance of many an embarrassing situation. Further, the temptation to do quack practice could more easily be suppressed.

GENERAL PRACTICE

JAMES L. HAMNER, M. D., *Editor*, Mannboro, Va.

PRENATAL CARE

OBSTETRICS has always comprised a large, interesting and very important part of the work of general practitioners, particularly those who do a large amount of rural work. There is no immediate possibility that this condition will change. As long as this is the case, and about ten thousand mothers die in this country each year as the result of pregnancy and childbirth, there is a challenge to the profession to improve on the present care of the prospective mother. Despite the fact that the general death rate in this country has never been lower nor the life expectancy higher, the death rate among mothers has remained about the same. Indeed, the death rate has made very little change since there have been statistics in the United States. The great pity is that with so much information

at hand to prevent these deaths they are not being prevented. It might be well to consider prenatal care here and discuss the normal delivery and postnatal care at later dates.

By careful prenatal care, the patient should be kept in such good physical condition that at the time of labor there will be little need of fear, if the physician is half-way skilled in his work and is thoroughly clean. The big job is to get the patient to consult her physician early. In this respect, the specialist has a big advantage over his fellow practitioner. The average private patient who goes to the spicialist will go early and will usually return when requested. There are still many patients who do not call the family physician until they are in labor. The doctor who has to care for these patients can always find an opportunity to impress upon them the importance of thorough and continuous care throughout pregnancy. One of the earlier signs or symptoms of pregnancy will bring many of these patients to the doctor. Here again he can do some real educational work. This can be made no more impressive than by starting the patient on the proper routine right away. This should begin with a thorough physical examination, including the needed laboratory tests, pelvic measurements, weight, blood pressure reading—and all abnormalities noted and recorded with complete history of the case. The patient should be given simple, but thorough, directions as to diet, elimination, exercise, care of breast and abdomen; cautioned to watch for danger signals, as headache, pain, swelling, defective vision, bleeding or anything unusual; and urged to report it any of these occur. She should be instructed to return at definite times more frequently as pregnancy progresses, and bring a specimen of urine each time. Notation of urinalysis, blood pressure reading, weight and findings of abnormal nature should be made on her obstetrical record and proper treatment instituted for correction. Proper records must be kept and referred to at each subsequent visit in order not to overlook any thing which should be checked. Particularly close attention should be paid to any elevation of blood pressure, or much weight increase, and prompt, vigorous action taken.

With proper coöperation on the part of the patient, she should go through her pregnancy in more comfort, and eclampsia and other dangers be prevented.

A vaginal examination should have been made at the first examination, and internal and external pelvic measurements made. The fewer vaginal examinations the better but a final examination during the late weeks of pregnancy would reveal a great deal. A well-made rectal examination probably would be bettter; but the danger of vaginal examinations, aseptically done, is so remote that it is probably the better source of information. If the cervix is long, thick and tough; if there are scars, cystic growths or erosions, then we can be pretty well assured of a long and tedious labor. This gives an opportunity for some correction and the proper planning of the care of the case. If the cervix is soft, thin, and is gradually dilating, and the head is down in the pelvis, we can be reasonably sure of a shorter and easier labor. It gives the patient a great deal of comfort to be reasonably assured and prepared for what is coming, and it is certainly a great help to the doctor to know that his patient is in good physical condition, and to know what to expect.

About the eight month the patient should be instructed as to the proper preparation for labor. She should be given a list of the necessary equipment for the occasion, instructed in the preparation of drygoods, utensils and hot and cold water, also the proper preparation of herself and when to call the doctor.

In a future issue we will discuss the management of the normal labor in the home. The general country practitioner is still delivering the majority of his babies in the home. More trained nurses and better trained doctors' helpers are available and used; so it is not so bad as some would have us believe.

UROLOGY

For this issue, N. O. Benson, M.D., Lumberton, N. C.

Unusually Large Ureteral Stone

Case Report

This case is of interest because of the size of the ureteral stone and long-standing symptoms caused by it.

A white, married woman, aged 40, was referred to me on the 20th of last June, complaining of severe pain over the left kidney and ureter. The past history is of interest and is as follows:

The patient's first attack of kidney colic occurred 25 years ago. It, like all the rest, was on the left side. Since this time the patient has had innumerable attacks of varying severity, some accompanied by chills, fever and nausea. Her first child was of normal delivery, and the mother had no complications; however, with the last two children, the youngest 5 years old, the mother had severe pain over the left kidney and ureter. The condition was diagnosed at this time as pyelitis and treated by hospitalization several times with some degree of improvement. For four years following this the patient had no severe attacks. One

year ago she had an attack of severe left renal colic with fever and chills but continued to stay up and did not go to bed until one week before admission. The patient had never passed a stone.

The present illness blends in completely with the past history. One week before admission, the patient had severe pains in her left lower ureter and a dull aching pain over the left kidney, accompanied by moderate fever, no chills or nausea. During this last attack there were moderate frequency, urgency and dysuria.

The picture presented was that of a fairly well developed, well nourished white woman, apparently toxic, with temperature 102. Head and chest examination was negative; abdomen—right side normal, on the left a definite dullness in the flank, and anteriorly to the left border of the rectus muscle, and a fairly tense but slightly fluctuating, nonmovable mass, filling the entire left side of the abdomen to below the crest of the ilium. Pain was elicited on pressure over the mass. Bladder capacity was normal, no residual urine, bladder mucosa and urethral orifice slightly congested. Right ureteral orifice slightly larger than normal, expulsion time normal; left orifice congested and from it issued a small worm-like stream of pus. Attempt to pass a catheter up the left ureter was thwarted by an obstruction 1 cm. up the ureter. Plain x-ray plate showed the right side completely filled with gas shadows. In the left side there was a mass extending to the left border of the spinal column upward to the normal upper border of the kidney and downward to the brim of the true pelvis. A shadow opposite the third lumber vertebra measured 3 x 2 cm. In the juxtavesical portion of the left ureter was a very dense shadow 8½ x 4 cm. Intravenous pyelogram at 15 and 30 minutes revealed normal right kidney pelvis, but no dye was seen in the left side.

W. B. C. were 8,500—polys 85%; R. B. C. 3, 570,000, hgb. 70%; malaria negative, stool negative. N-P. N. 35.2 and urea nitrogen 21.4 mgm. per 100 c. c. blood, urea ratio 60, creatinine 1.5 mg. Urine—cloudy, alkaline. sp. gr. 1.020, albumin x, sugar negative, 100 pus cells per h. p. f. Smear revealed many gram-negative cocci and some large gram-positive bacilli.

The patient was given two transfusions of 400 c. c. citrated blood and three days after admission a left nephrectomy was performed. Under nitrous oxide and ether anesthesia the Bazy modification of the ordinary lumbar incision was used. The kidney was found to be a very thin-walled sac filling the entire left flank. The kidney was mobilized and with some difficulty the upper pole was delivered making it possible to apply clamps to the renal pedicle. After division of the pedicle, the kidney was delivered and the ureter freed as far as the incision would permit, then clamped and doubly ligated. Closure with drains was made in the usual method. The kidney measured 10 x 5 in. and contained 1800 c. c. of extremely foul pus. The entire kidney substance was gone and in no place was the wall more than 8 mm. (1/3 in.) thick. The 2 x 3 cm. shadow on the x-ray plate was made by a flat stone found in the kidney sac.

Convalesence from this operation was uneventful except for a gastrointestinal flare-up on July 6th. She was allowed to go home on July 14th feeling well. On the 17th the patient had fever and was advised to return to the hospital.

Examination of the incision revealed serum drainage from site of the removed drainage tubes. Probing this opening revealed a large pus pocket evidently caused by an opening in the upper end of the severed cavity and drainage continued.

On the 27th a left ureterectomy was performed through an incision parallel to Poupart's ligament. The ureter was a thin-walled tube varying from 4 to 5 cm. in diameter and containing much foul-smelling yellow pus. At the lower end of the ureter was a stone 9 x 3.5 cm., weighing 71 gm. The composition of the stone was not determined except for the outer coating of calcium phosphate.

Following this operation the fever subsided and her temperature has remained normal since. At present there is a very slight drainage from the ureterectomy incision and the nephrectomy incision has healed.

OBSTETRICS

Ivan Marriott Procter, M.D., F.A.C.S., *Editor*
and
Kenneth Dickinson, M. D., Raleigh, N. C.

Care of the Breast

In the practice of obstetrics we should give the same careful attention to the breast as to the pelvic organs. A thorough examination should include inspection for the detection of the small, retracted, flat or inverted nipple. The former may be congenital or due to compression by tight-fitting brassieres during the developmental period. The inverted nipple is a result of the shortening of the connective tissue and invagination of the nipple. Both types of nipples show a striking absence of connective tissue. Pathologic changes in cases of inversion result from the accumulation of cellular and secretory debris, which forms a fertile field for the growth of bacteria. Occasionally there is hypertrophy of the nipple, which may be affected by an eczematoid dermatitis. Palpation reveals the presence of normal, firm gland tissue or of exces-

sive fat. The pendulous breast frequently causes discomfort as a result of venous and lymphatic stasis, which interferes with normal lactation and nursing.

The breast being, like the uterus, in a state of constant change, requires repeated examinations during pregnancy. Microscopic examination during the gravid state shows a striking loss of fat and connective tissue, which is replaced with new acini and milk ducts. During pregnancy there is fatty degeneration of cells lining the alveolar spaces, held in check by a hormone formed in the placenta. Care of the breast, and of the entire reproductive system, should begin in adolescence. For years we have discouraged the use of tight-fitting brassieres and supports that compress these delicate organs, interfering with their normal development, contour, position and circulation. Many child-bearing women suffer from engorged, pendulous, unattractive breasts as a result of style and abuse during adolescence and early womanhood. A brassiere meaured and fitted to the individual is advised as a shelf to support the organs, just as the uplift abdominal support in pregnancy is preferable to a compressing, straight-front corset.

Physicians differ in their opinion as to the prenatal care of the breast, but all agree upon the value of cleanliness as a prophylactic, believing that the great majority of infections enter by way of the nipple. This structure demands careful attention. The best treatment is gentle cleanliness with mild soap and warm water. The retracted, flat nipple is occasionally improved by rotary traction, but this should be reserved for the class of patients whose clean technique can be relied upon.

The dry, chapped nipple may be improved by applications of a bland ointment. Debris and crusting may be removed with boric acid or weak alcohol solutions. Astringents for the purpose of toughening are better avoided; and the value of direct sunlight should not be overlooked. Heavy, pendulous, engorged or painful breasts should be supported by the uplift brassiere.

The puerperium heightens the watchfulness necessary in the care of the breast, and here again cleanliness is the principle of all care. The hands of attendants must be scrupulously clean; sterile pads should cover the nipple between nursings. We use strips of adhesive tape with ties attached to the breast surface, the sterile gauze covering the nipple being fixed in place by the ties. Mild soap and water are used gently and 50-per cent alcohol is used to cleanse the nipples before and after nursing. Thorough drying is necessary to prevent chapping. A binder should be shaped to the contour of the breast by the use of safetypins. The heavily engorged breast of the woman in bed tends to fall laterally and to rotate counter-clockwise; a correctly-applied binder is effective in correcting this distortion.

Asepsis is generally appreciated; what is not so generally appreciated is the importance of proper nursing technique. The mother has to be instructed in this. She lies partially on the nursing side supporting the baby on the arm, the nipple on line with the infant's mouth. The free hand is used to direct and assist. If the baby's position is too high, too low, too far anterior or posterior, the nipple is angulated, to which is added the trauma that may result from a vigorous infant's efforts to retain the nipple in an awkward position.

Similarly, excoriation, maceration or cracking of the epithelial covering of the nipple may result from too frequent and prolonged nursing before lactation is established (three or four days). Five-minute nursing periods begun eight hours after delivery and repeated every six hours until the milk has come in seems best. Such a routine permits the nipple to adjust itself to its new function as well as to give the baby the benefits of the colostrum obtained.

When erosions, abrasions and fissures occur in spite of every precaution, they warrant the closest possible attention, because such injuries are open doors to breast infections. Most of them will heal quickly if the baby is taken from the breast. However, one is justified in the use of the nipple shield and application of a weak solution of silver nitrate, and in temporary periods of rest from nursing on the affected side. Ointments are of questionable value. Often the breast pump is less injurious than the baby's mouth (itself contaminated with bacteria) and may be substituted for nursing until healing is underway. Hot fomentations of boric acid solution are of value. Any conservative treatment not characterized by healing or improvement should be adandoned and nursing discontinued.

There is a tendency to over-treat the physiologic engorgement of the third and fourth days, much of it due to generalized edema. The erroneous impression that the breast at this time is a bag filled with milk almost to the bursting point has led to considerable misguided massage, manual evacuation and pumping. It is surprising what a small amount of milk is obtained by these measures. Gentle massage by an experienced attendant is of value; but, in general, the skillful application of the breast binder or of adhesive tape, the use of hot or cold applications, temporary limitation of fluids and a saline cathartic are all that are necessary. Some physicians rely upon the binder only, adopting a strict hand-off policy until Nature makes the necessary adjustments. This same attitude is applicable to the care of the breast en-

gorged from discontinuing nursing for one reason or another. These breasts should never be pumped, since pumping acts like nursing to stimulate the production of milk—the very thing that is not desired. Opiates, limitation of fluids, saline catharsis, breast support, are permissible.

The breast abscess is usually announced in a stormy fashion. Ordinarily there is an abrupt rise in temperature frequently accompanied by a chill; the breast becomes exquisitely tender to the gentlest manipulation and is reddened in the infected region; general malaise is marked. Staphylococcus, streptococcus, pneumococcus or the colon bacillus may be the causative organism. The prevention of this complication is the most important goal of all prenatal and puerperal care. Its occurrence as a complication may overshadow in importance all other incidents of the pregnancy and prolong the woman's morbidity so that the act of childbearing seems to her an insignificant occurrence in the extended disability of a breast abscess. Its prevention and treatment is therefore so major a factor in obstetrics that no physician can afford to neglect the breasts in his scheme of prenatal care.

Conservatism—hot boric-acid dressings, discontinuation of nursing, the breast binder, general supportive and medical treatment as for any infection —is the rule at the onset. With localization and fluctuation incision should not be delayed, since multiplicity of pus pockets from extension of the process increases the extent of surgery necessary.

Two cases from the Mary Elizabeth Hospital aptly illustrate the degree to which breast infections may complicate pregnancy. This is particularly true of the second case where it is seen that to a hospital stay of six days due to her obstetrical care were added 14 additional days of hospital morbidity due to her breast abscess. There is no record of the many additional days of incapacity that both of these patients underwent after leaving the hospital.

Case 1. Gravida 1, admitted June 20th, 1937; 15 hour labor; episiotomy, outlet forceps; loss of blood 150 c. c. Uneventful immediate puerperium. Hospital stay 6 days. Readmitted Sept. 10th: T. 101, right breast indurated, reddened, small area of fluctuation. Incision and drainage of breast under local anesthesia with evacuation of pus.

Hospital stay 3 days. Discharged; to have daily irrigations and dressings. Readmitted Sept. 20th: Fluctuation in an area near site of former incision and drainage. Under gas-oxygen anesthesia, incision and drainage with blunt dissection into an adjacent pus pocket. Drains inserted. Hospital stay 2 days. Discharged; to have daily irrigations and dressings.

Case 2. Gravida 1; admitted June 3rd, 1937; 38 hour labor; R. O. P. position requiring episiotomy and mid axis-traction forceps. Uneventful immediate puerperium. Hospital stay 6 days.

Readmitted July 19th: T. 102, marked reddening, swelling and some fluctuation in the nipple region. Incision and drainage of breast under novocaine, pus evacuated, drains inserted. Next day drains removed, wound irrigated; T. 101.8. Third day T. and P. remained high, patient very uncomfortable. Other areas of reddening, tenderness and fluctuation were evident several cms. from the original. July 24th, breast incised and drained, pus evacuated by blunt dissection into pus cavities. July 25th, additional small incision into isolated area of abscess formation. July 26th, small incision and blunt dissection into small abscess pocket with evacuation of pus. Aug. 1st, patient greatly improved, T. normal receiving daily dressings and irrigations. Discharged: Total hospital stay 14 days.

Summary

1. Care of the breast is an important part of prenatal care.
2. Examinations should be made periodically throughout pregnancy.
3. The uplift brassiere should be *pre*scribed; the compressing type of brassiere should be *pro*scribed; education concerning this should begin at the onset of puberty.
4. Cleanliness is the most important single factor in the prenatal care of the breast.
5. Watchfulness, cleanliness, the proper support and proper nursing technique are the most important factors in the puerperal care of the breast.
6. Physiological breast engorgement should not be over-treated.
7. Conservative treatment should be abandoned in the presence of a frank breast abscess.
8. Two cases are reported emphasizing the prolonged disability and morbidity that may result from a breast abscess.

HOSPITALS

R. B. Davis, M. D., *Editor*, Greensboro, N. C.

Cooperative Buying for Hospitals

The news of the day centers around coöperation. Each nation, whether at war or peace, is soliciting the other nations' coöperation. The citizenship of every nation is being urged to coöperate with the government of their country. Each profession and trade is urging coöperation among its members; the former through societies and clubs, the latter

through various types of unions. It must be, therefore, that coöperation is a valuable asset to any group of individuals or nations. We have often heard it said that the panacea for the agricultural ills is coöperative selling, but this is only half of the game for coöperative buying is just as important.

For many years I have wondered why the hospitals were so slow in organizing a coöperative purchasing agency in each State. There are some 105 hospitals and sanatoriums in this State. Each of these purchases something every day which is also purchased by the others. From 1 to 25 per cent could be saved by these institutions buying through a central purchasing agency. The total cost of operating any such agency would not exceed a fourth of the amount saved by purchasing in this manner. It does seem that it would not be hard to convince the hospital world of this fact. Another valuable asset to be appreciated in purchasing through a central agency is the saving in time of the purchasing officer of the hospital.

It is not an uncommon sight to see from one to five agents waiting in the hall on Monday morning to see the purchasing agent of a hospital. Certainly it is not to be doubted that the time of these salesmen is reflected in the price of the goods they sell. Why should it be then that the hospitals should hire someone to sell them something and then let them sit around from one to three hours idling their time away? And, this is not all, the purchasing officer of a hospital has to waste a great deal of time in greeting these salesmen and listening to their sales talk. A greater part of this waste of time could be avoided. The person doing the buying for the hospital would pick up the telephone and call the office of the state purchasing agent for a very small fee. There, promptly, he could find out the bare truth concerning the supplies or material in which the hospital was interested. There would be no time lost by any party concerned in passing the time of day, social conversation, jokes and the like but the conversation would immediately take on a business aspect.

You might ask what plan would be practicable and feasible for adoption by any State. The following plan might be considered:

1. A request sent to the various hospital associations in the State for the appointment of a committee of not less than three and not more than five of the best business men in the organization, of long experience in hospital purchasing. It should be given the responsibility and authority to draw up by-laws, rules and regulations for a central purchasing agency to be organized, operated and controlled by the hospital organizations of that state. It should also be their duty to work out in detail the salaries of the personnel, office equipment and supplies and to present this in a concrete manner for presentation to the next regular meeting of the hospital association. As far as is possible all room for argument should be left out. I have often seen some of the most progressive movements well presented by a carefully selected committee killed on the floor of a meeting by some thoughtless, unappreciative, egotistical member who happened at the moment to disagree with the program, largely because he or she had not thought up the idea. Anyone can, without giving any new system careful thought, give a thousand reasons why it will not work. But, if there is only one good reason, and the members of the organization as a whole agree upon this, let them vote yea or nay for a trial of the new system.
2. Obviously any system requiring the handling of money will have to be established and conducted on a business basis. This can be done if the hospitals deposit from one-hundred to five-hundred dollars with the central purchasing agency. This money will be perfectly safe for it will be protected by bond. The small amount of interest which will be lost in keeping this amount deposited will be negligible. It will be far better that cash purchase be made rather than any time consideration. "Money makes the mare go," and "A penny saved is a penny earned." No system will be a success if the purchasing officer is going to be troubled with collections from the hospital. No matter how hard we try to discriminate between those who are prompt pay and those who are slow it is impossible to do so without bruising the feelings and offending the pride of some of the owners and operators. Therefore, we must assume a cash-and-carry attitude. If you pay for what you buy when you buy it, nine chances to one you will be better satisfied. Certainly you will take better care and use more economically the materials and supplies purchased.

The Editor of the Hospital Section of *Southern Medicine & Surgery* feels very vitally interested in this subject and will be pleased to set aside space for the discussion of this matter. Your articles will be greatly appreciated and your coöperation is earnestly sought. There is an opportunity to save thousands of dollars for hospitals. Won't we help each other to do this?

Undulant Fever.—It is important that the practitioner realize that in many cases there is a single attack of fever lasting only a week or two.—*Blumer.*

THERAPEUTICS

J. F. Nash, M. D., *Editor*, Saint Pauls, N. C.

Odds and Ends

Sulfanilamide.—A recent textbook lists at least 33 diseases in which this drug and its derivatives are successfully used. Every general practitioner has used it in gonorrhea, erysipelas, septic sore throat and similar affections with satisfactory, and often amazingly gratifying, results. Many have reactions (weakness, nausea etc.) which may be transitiory and, to the doctor, unimportant; but to the patient they are often alarming. The administration of 50 or 100 mgms. nicotinic acid a half hour prior to the dosage of this drug will prevent these reactions, and, more important, will allow a larger dosage, and work a speedier recovery. A mild silver or mild astringent injection b. i. d. or t. i. d., sealed in with collodion over the meatus, helps clear up the discharge.

The advent of cold weather perforce draws our attention to respiratory diseases especially pneumonia. *Sulfapyridine* was most happily given in the treatment of a few cases last winter. This new derivative is now generally marketed by several trustworthy manufacturers, and, while it is a drug that demands careful watching, the lowered mortality amply justifies its use; for pneumonia is a Captain among The Men of Death, demanding for its toll 20 or 40% of those coming down with the disease. It is my opinion that many respiratory infections may be prevented by the use of hypodermic cold sera—6 or 8 doses instead of the recommended 4. The vaccine by mouth has not proved nearly so effective as by the needle.

Eclampsia.—Vaccination has nearly eliminated smallpox, diphtheria and typhoid. Prenatal clinics are accomplishing in like manner the elimination of eclampsia; but in the occasional, neglected case remember the massive use of magnesium sulphate and opiates, but *forget surgical intervention.*

Climacteric.—What shall be done for the nervous hysterical woman of 40 to 50 years, who is passing the stormiest period of existence? A judicious use of estrones is a godsend to these—quiets the nerves, reduces that hypertension, and puts her at peace again with her family and neighbors. Wonder if a few doses to men wouldn't help?

Arthritis.—In spite of all claims advanced for this and that remedy—sulphur, bee venom, etc.—large doses of salicylates intravenously will give prompter relief and as lasting relief as any. There is a tradition among the God-blessed Macks of Eastern Carolina that an arthritic stung by bees will be cured, and that bee stings will prevent asthma recurring. Might be worth a trial to give asthmatics bee-venom!

License.—What shall the North Carolina physician do when weddings are announced, parties showered on the bride-elect and the contracting parties pictures in the papers, and one blood Wassermann report is positive? Perhaps our solons can advise us, for it will certainly happen to a certain percentage of physicians.

Ancient Remedies and Creeds.—We are apt to prate of eugenics, survival of the fittest, heat for syphilis of the cerebrospinal system, and brain surgery. We forget that the Pharaohs practised eugenics by miscegenation and murder of parent, child or brother, and gave Egypt a civilization far in advance of the culture of Greek or Roman. Our own Indians in every village had facilities for steam baths followed by a plunge in icy water. Every race practised trephining before history was recorded. Whatever the purpose—even to let bad spirits out and good spirits into the cranium—these must have been some virtue, else this practise would not have been so general. "There is nothing new under the sun."

Pessaries.—It is refreshing to see in the Journal of the A. M. A. of October 28th, Drs. Dannreuther, Van Hoosen, Corn *et al.* advocating use of pessaries in suitable cases of displacements. The introduction of a pessary is a simple procedure, and gives wonderful relief, and will often produce permanent placement.

Cholecystitis.—Have you observed that in a great majority of those having gallbladder troubles —whether stones, adhesions or chronic cystitis—there is usually a history of one or more attacks of malaria or typhoid many years prior?

Enemas.—One is much more apt to give a high enema by introducing the tip of nozzle or tube 2 or 3 inches than by farther insertion. Any enema of more than a few ounces will be a high enema unless it be expelled promptly, and insertion of a foreign body for 6, 8 or 10 inches or more is prone to irritate the gut and cause expulsion of the enema. An enema of warm water will do all the good and none of the harm of a soapsuds enema.

GYNECOLOGY

G. Carlyle Cook, M. D., *Editor*, Winston-Salem, N. C.

Another Sign Post in Gynecology

Four years ago an unmarried woman, aged 38, came to me complaining of a mild vaginal discharge. Her periods were normal but the discharge continued bloody for several days following menstruation. Examination showed an ulcerated cervix, otherwise no abnormality was found. The cervix

was cauterized (post cautery). Within a month she returned with the cervix entirely healed and the discharge abated.

In about six months she returned with recurrence of the discharge, whereupon a D. and C. was done and a biopsy from uterine scrapings which showed very mild benign hyperplasia. Again the discharge subsided for six months when it recurred again. Another D. and C. and biopsy were done with negative findings. As the age for menopause was approaching and the patient was much annoyed by the mild metrorrhagia, 1200 milligram hours of radium were applied.

Following this, for a year she remained free from symptoms referable to the G.-U. tract. However, she begun to have rheumatic pains about her body, developed definite Heberden's nodes which were very painful and her blood pressure rose to 190/100.

The internist and G.-U. specialists worked out the case as to kidney diseases and focal infection and nothing was found. I examined her cervix again which appeared to be perfectly normal and healthy, but upon trying to introduce a sound into the uterus, I found complete atresia. She was sent to the hospital and the canal reëstablished by forcible dilatation. The uterine cavity was found to contain about four ounces of thick pus of a very foul odor.

When this was evacuated, her systemic symptoms promptly abated. The vaginal discharge, however, recurred.

Uterine scrapings were again examined microscopically and showed no malignancy. Six months later, however, with the continued very slight bloody discharge, uterine scrapings did show adenocarcinoma. Within the past month I removed the uterus *in toto* and found that it contained a well developed, early adenocarcinoma of the fundus.

This case is cited here, not for importance of cancer *per se* but to stress the importance of treatment of the cervix.

I have found recently several cases of atresia developing many months, even years, after cervical treatment including cautery, D. and C. and especially radium therapy, and I have made it a point not to treat these cases unless the patient agreed to take all follow-up treatment which is advised.

It goes to show that the follow-up treatment should be continued over a long period of time and that when atresia does develop it may cause many and various ills. Thorough search for focal infections has not been made until the cervical canal is thoroughly explored. We may produce systemic conditions remote from the cervix by improper treatment of that organ, as well as promote the development of cancer when we least expect it.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Notes on Sulfanilamide and Sulfapyridine*

Sulfanilamide

This drug is the most nearly perfect body antiseptic for certain pathogenic organisms. While no one seems certain of its action *in vivo,* it is believed that sulfanilamide is set free by reduction of its prontosils within the body. It is an aniline derivative, an amide of sulfanilic acid containing 18.5% sulfur, soluble in hot water up to 1%. It has a better taste. Absorption from the intestinal tract is demonstrable within four hours. Distribution is equal to all tissues of the body except bone and fat. After withdrawal it disappears from the body within two to three days. It is passed through the placenta to the fetus; it is excreted in breast milk. In the presence of impaired renal excretion elimination is slowed. In such renal disease a smaller dose is required.

In a conversation with Dr. Perrin Long, I learned that a hemoglobin determination daily for the first three days of administration of the drug, and thereafter every third day is all that is necessary to detect blood destruction. If the blood cell is going to be altered in children by sulfanilamide it will usually be so within the first three days. Long did not fear to use it in combination with other drugs. Followers of Hartmann do not give sodium bicarbonate with the drug. In my experience without the use of sodium bicarbonate, no untoward reactions have developed. The desired blood concentration of the drug is probably 10 mgm. per cent.

The Report of the Committee on Immunization and Procedures of Acute Infectious Diseases of the American Academy of Pediatrics says: "The initial dose is ½ the total dose for the first day; the first day's dose is computed on the basis of 1 to 2 grains per pound body weight up to 120 pounds, given at spaced intervals over a 24-hour period. For the next two days the total dose per day is ½ to ¾ grains per pound divided in equal doses every four hours. Continue this sustaining dose as long as necessary in the absence of adverse reactions." The drug is best given by mouth. All other routes may be used. Too early withdrawal of the drug often leads to relapse. Give the drug regularly, night and day, to maintain the

*Read before St. Joseph's Hospital Staff Meeting, Sept. 1939.

proper blood concentration.

SULFAPYRIDINE

Sulfapyridine can be used wherever sulfanilamide has been indicated, and several diseases respond well to it which are not influenced by sulfanilamide. It is dispensed in tablets of 7½ grains and in powder form. It is soluble in 1 to 1,000 solution and has a slightly bitter taste. As sulfanilamide gained its popularity in beta hemolytic streptococcic infections, sulfapyridine gained favor in the treatment of pneumococcic infections. Also, it has been successfully used in the treatment of meningococcic infections, certain forms of staphylococcic infections (osteomyelitis), gonorrhea (now the drug of choice), and *Bacillus welchii* infections. While sulfapyridine appears to be less toxic than sulfanilamide, it is too toxic to be used indiscriminately. It also causes vomiting, cyanosis and blood dyscrasias. The use of methylene blue to overcome the cyanosis is indicated in sulfapyridine as in sulfanilamide. It may be a dangerous drug to use in syphilitics. Two fatal cases of hemolytic anemia have been reported following its use. Both patients had syphilis. Long believes that the deaths from pneumococcal pneumonia can be reduced by 80% by the proper use of this drug.

Sulfapyridine is almost always given by mouth. The powder, in oil, may be given in the muscle. The drug is frequently vomited; try giving it in milk, in honey, or with or following food. Usually only the first few doses are vomited. The following dose schedule is from the Committee's report: "Infants; 15 grains stat and 7½ grains every four hours. Children under 12 years of age: 15 to 30 grains stat and 15 grains every four hours until symptoms abate. Children over 12 years of age: 30 to 60 grains stat and 15 grains every four hours. Watch for hematuria. The drug may be responsible for the formation of renal stones. The desired blood concentration is probably between 2 and 5 mgm. per cent."

Several new combinations of the drug are about to be offered for our use, just as we are beginning to learn to use the drug in its original form.

HUMAN BEHAVIOR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

OF JOHN BROWN

THE break of day was coming. All around were hills, and on one side was a river. Slowly the winding train stopped. From my berth in a Pullman of the Baltimore and Ohio's Capitol Limited I read on a board on the end of the station house: Harpers Ferry. Memories? Old John Brown; Colonel Robert E. Lee; Lieutenant J. E. B. Stuart; John Brown's assassinations of peaceful citizens in the quiet village; the deaths under his eyes of two of his sons, and of other of his followers; his own words; his capture by United States troops; his trial, his conviction; his execution; his immortality; the Civil War; Stonewall Jackson and Harpers Ferry; the bloody battle of Antietam; the tragedy of the four-year civil war, little of which was civil; death, destruction, Appomattox, reconstruction.

I was returning with Dr. H. C. Henry from Chicago, where we had attended the annual meeting of the American Psychiatric Association, oldest of our national medical societies—organized in 1884. Because of the present war in Europe its next meeting has been transferred from Quebec to Cincinnati in May, 1940, because Canada is engaged with her Mother Country in that war. In Chicago I had communed briefly with the Menningers—Dr. William C. Menninger and Dr. Karl A. Menninger—of the Menninger Clinic in Topeka. Most of you know that Karl Menninger has given us *The Human Mind* and *Man Against Himself*. His pen continues to enrich our literature. There at Topeka those brothers and their father and other co-workers are carrying on psychiatric work of the highest order. Do we realize how young, how courageous, how forward-going the development of our country is? Did I not recall while I was in Chicago that Abraham Lincoln, a rather obscure Mid-West lawyer, in returning from there to his home after having been nominated for the presidency of the United States, had complained to the train-conductor that the newly-contrived beds on the train were too short for such as he? I realized, as he Diesel-engined train flew almost silently eastward during the long hours of the night that I was returning to the Old United States out of the New United States in which history is being constantly written. What place so consequential that the hurrying train should tarry for three or four minutes at some hour beyond midnight? I looked upon the station at Pittsburgh. And I thought I remembered that near there, in his first real battle, the young Washington had heard for the first time the whistle of bullets, and that he had written to some Virginia girl that their music was sweet to his ears. And I thought, too, that I had only lately heard that the bony skeleton of Little Sorrel, Stonewall Jackson's charger, constitutes a prized object in some museum there, far from the Valley of Virginia in which Stonewall Jackson and Little Sorrel each wrote their names in flaming letters upon history's sky. And Little Sorrel had been one of a train-load of horses en route from the west to Washington City when the

Confederates possessed themselves of the much-needed live stock at Harpers Ferry. Might not the Yankees send back to the Valley the bones of Little Sorrel, so that bones and spirit might commune about the old brave days? Pittsburgh and Staunton once were both inhabitants of Augusta County, Virginia.

But I could not forget John Brown. His soul, did he have a soul? or only fanaticism and hate? And insanity? What influence has he exercised in American history? Was he a patriot? Did he care for others, slaves or his own children, or only for himself? Job? Why did I think all but simultaneously of the Patriarch of the Land of Uz and of John Brown? Who can know what he thinks and why he thinks it? Who can? Is there any taste in the white of an egg? If a man die, shall he live again? Can a mortal even speculate about what his state would be if he had never been born? Why should one suffer physical pain almost unbearable and sorrow and distress almost intolerable? Does the Book of Job profess to attempt to give answer to the ages-old question about the mystery of the necessity of human suffering?

Even before I had attended the medical meeting in Chicago I had asked my friend, Dr. Karl A. Menninger, to give us an analysis of Job and a report of his conception of the character and the personality and the mental state of old John Brown. Dr Menninger replied promptly that he had long been interested in the philosophy of the Book of Job and that he would contemplate tackling the problem. He told me that one of his friends was evolving a play in which John Brown would appear as the central figure and that eventually a copy of the drama would reach me.

The little book has just come: *John Brown: A Play in Three Acts,* by Kirke Mechem. The play is written in blank verse, in three acts, in 113 pages. The first words in the first scene in the first act are spoken by a young man, a citizen-defender of Lawrence, Kansas, against the pro-slavery mob assembled around the town. He speaks in the incompleted frontier hotel of the western village. The time is 1855. The last words—almost—of the tragic drama are spoken by the spirit of one of John Brown's followers, John Henry Kagi, killed at Harpers Ferry, as Kagi's spirit becomes vocal in communion with the spirit of Oliver, one of the sons of John Brown, killed also with Kagi. The two spirits speak each to the other as they look from the neighbouring hills upon the legal execution of John Brown at Charlestown, Virginia, on the second day of December, 1859. Oliver Brown and John Henry Kagi—their spirits—become endowed with the gift of prophecy and of vision. They see millions and millions of soldiers, Federal and Confederate, marching and battling to the strains of "John Brown's Body." The last lines of the book are spoken by the spirit of John Brown himself, as he calls the names of some of the great battles of the Civil War: Shiloh, Gettysburg, Vicksburg, Lookout Mountain, Wilderness.

Kirke Mechem gives us, I doubt not, John Brown, old John Brown of Osawatomie and of Pottawatomie, in Kirke Mechem's own Kansas, where the old fanatic behaved cowardly and cruelly, courageously and patriotically. He presents him appealingly and repellantly—gaunt, tall, angular, uncouth, long-bewhiskered, dominating, tyrannical, religious, sadistically cruel, patriotic, lawless, the father of twenty children, several of whom he led to death in his bitter crusade against slavery. Old John Brown could love a cause and sacrifice his life for it, but one wonders if he could love a human being. He was not considerate of the comfort or of the lives of his own children. Did he have mercy upon his wives, the first of whom bore his seven children in twelve years, when she died; and the second of whom married at sixteen, a year after his first wife's death, gave him thirteen more children?

Kirke Mechem is an artist who portrays in words instead of in colors John Brown in action —mental and physical. He enables us to feel John Brown's feelings; to suffer with his conception of the suffering slaves, and he succeeds in driving the old abolitionist-insurrectionist through four turbulent years impelled and obsessed by the one thought of liberating the slaves and of abolishing legal slavery. Mechem presents John Brown as enslaved himself—as bound and shackled and incarcerated by the paranoid urge to do away with slavery and to exercise leadership in the bloody insurrection in which armed slaves would do as much killing of masters and of mistresses and of little children as might be necessary in the bloody purge. How could the wounded, bewhiskered old fanatic, called upon by the court at Charlestown at the conclusion of his trial in 1859, to speak his mind, experience remorse or feel regret? Had he not been directed by God to do what he had done? What if two or three of his many sons had been killed in battle in standing beside their fanatical father? What could the loss of a mere human life —his own or another's—amount to in a cause so holy? No, he had not sinned against God's law or against man's; let the hanging go on; history would attend to slavery and assign his bust to the proper niche in statuary hall. He would say that he had been kindly treated by his captors. A month after he stood wounded and defiant in the

little court room, the recipient of the sentence of death, his long ungainly, fifty-nine-year-old body dangled at last into immobility at the end of a hempen rope. John Brown had become one of the world's immortals. The Civil War had begun. The peculiar institution of slavery within a democracy had become doomed. In the South the two races were to continue to live apart yet side-by-side. In the North and in the West, what is to be the ultimate status in those regions of the Negro? Who can make answer?

I hope for many reasons that *John Brown* may be read by many people in the North and in the South and in the West. John Brown was born in 1800, in Connecticut. Nat Turner was born also in 1800, in Virginia, and in slavery. Nat Turner secretly led an insurrection of slavery in Southampton County, Virginia, against the white people. Within a few hours the Negroes had assassinated and mutilated about sixty people, most of whom were women and children. Nat Turner and a number of his fellow-assassins were legally executed. Probably a number of other Negroes had been killed in running down the assassins. Nat Turner was insane. He, too, was terribly religious. He, too, believed himself to be called of God to do his bloody work. His murdersome business had been preceded by insurrections of slaves in the West Indies. The immediate result of Nat Turner's insurrection was to tend to make slavery harder on the Negroes. The many manumission societies throughout the South that had long been instrumental in helping to manumit many slaves immediately went out of existence. Because Nat Turner's young master had taught Nat to read and to write, so that he became a preacher whom his fellow-slaves looked upon as divinely inspired, it became a crime in most Southern states to teach slaves to read and to write. Did John Brown know about Nat Turner? Was he influenced by Nat Turner? Probably not. About the time Nat Turner was at his bloody work in Virginia John Brown was marrying his second, sixteen-year-old wife. And Southampton County, Virginia, gave to the Union Army General George H. Thomas, the Rock of Chickamauga, one of the army's ablest commanders. But after he had decided to fight against his native state did any member of his own Virginia family ever speak his name again?

The adoption of the Kansas-Nebraska bill in the 1850's left to the voters of the states that were to come into the Union decision as to whether states should be admitted as free or as slave states. That legislation took old John Brown to Kansas in an effort to make her a free state; that bill spelt the death of the old Whig party, and called into being the new Republican party, and made possible Lincoln's election. The Kansas-Nebraska bill doomed slavery and the slave-holding oligarchy that had largely created and had dominated the nation from Jamestown Island's day until Lincoln's election. It was fateful legislation. John Brown became a part of it.

Was John Brown insane? What if he had been so adjudged and committed to the State Hospital at Staunton, Virginia? What would his abolitionist supporters in New England have thought of their hero? His family, back of him, was filled with insanity. His mother, who died when he was eight years old, was probably insane when he was born. She died insane. One of her sisters died insane. Three sons of her brother were committed to an asylum. John Brown's maternal grandmother died insane. John Brown's methods for liberating the slaves were irrational. An intelligent man should have known that such conduct would finally bring a noose around his neck. He stumbled into the pit digged by his own hands. But he precipitated the Civil War, and he probably sustained it to the end.

And John Brown was not the first psychopathic mortal to impress himself upon history. Joan of Arc, Oliver Cromwell, Sam Houston; and shall I write Stonewall Jackson and Abraham Lincoln and Thad Stevens and many more names?

Kirke Mechem is still a young man, a citizen of Kansas; he was a soldier in the World War; a newspaper man; he is a poet, a dramatist, and he is Secretary of the Kansas State Historical Society at Topeka. The head of John Brown on the book's jacket is by John Steuart Curry, another Kansan. It is a terrible, and awful-looking human head, but I doubt not it is the head of Old Osawatomie. And the little book is published by the Kansas Magazine Publishing Association at Manhattan, Kansas. It is a Kansas book.

The tragedy has moved me as I have not been moved by reading for many a year. Old John Brown gave his own life and the lives of several of his sons in his protest against the status quo. His life had been a progressive failure. He had failed economically; he had failed as a home-maker; he had failed as a law-abiding citizen. He succeeded only through his death. He was constitutionally fitted only for martyrdom. The martyr is always successful—in his own opinion.

FREUD.—An essay of his on the plant Erythroxylon coca resulted in the use of cocaine in eye surgery.—*R. M. Pollitzer*, in *Bul. Greenville Co. (S. C.) Med. Soc.*

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHEN, A.B., M.D., LL.D.
President and Former Dean of The School of Medicine, Wake Forest College

ROBERT SEYMOUR BRIDGES
(1844-1930)

DOCTOR Bridges, late Poet-Laureate of England, was born at Walmer and was educated at Eton and at Corpus-Christi College, Oxford. He then entered as a medical student at St. Bartholomew's in London and received the M. B. degree in 1874. He soon became consulting physician at the Children's Hospital and assistant physician at the Great Northern Hospital. Although an unusually successful physician, in 1882, at the age of thirty-eight, he gave up medicine and devoted his whole time to literature. The next year he published Prometheus, The Fire-Giver. Then followed eight plays, including Nero, Ulysses, The Christian Captives, Humours of the Court, and The Feast of Bacchus.

His poetry, chiefly lyrical, fills many volumes. Among his best poems are A Passer-By, London Snow, and On a Dead Child. In the main his poetry is marked by a sense of joy in the lovely things of life; seldom does he sound a note of sorrow.

In 1913 he was made Poet-Laureate. One of his best works was written in 1916 during the great war and was entitled Spirit of Men.

His best prose writings are Milton's Prosody; John Keats, A Critical Essay; and The Necessity of Poetry, an Address.

At the age of eighty-five, just a few months before his death in 1930, he published his last great poem—The Testament of Beauty. This is a confession of philosophical faith and his purpose seems to be to reconcile scientific knowledge with traditional belief.

SIR RONALD ROSS
(1857-1932)

THE idea that malaria was due to bad air was one of the early concepts of disease. Thus the name *mal*—bad, and *aria*—air. It was thought that malaria was due to atmospheric pollution of some kind.

In 1717, in writing on the subject of malaria, the Italian physician Lancini claimed—with much support from circumstantial evidence—that the causative factor of malaria was the product of vegetable decomposition occurring in swamps and marshy places. He therefore called this agent *marsh miasm*. This word coming from the Greek *miasma*, meaning a stain, a pollution. This view was generally held until Alphonse Laveran, an army surgeon stationed in Algeria, discovered in 1880 the parasite of malarial fever in the red blood cells of patients suffering from malaria. In 1907, Laveran received the Nobel Prize for this discovery and his other work on tropical diseases and military medicine.

This was a long step forward and gave a rational basis for the cure of a large majority of cases of malaria by the use of Peruvian bark or its alkaloid, quinine. But it did not make possible the prevention of malaria on a large scale.

It remained for that brilliant British physician, Dr. Ronald Ross, to convict the mosquito as the transmitter of malaria, thus enabling medical science to free from the ravages of malaria regions of the earth heretofore uninhabitable for the white man, and making possible such engineering feats as the construction of the Panama Canal.

Ronald Ross was born in India in 1857. At the age of eight he was sent to England to begin his education. When he was sixteen his pencil sketch of Raphael's

Torch Bearers won the prize for the best drawing in England at the Oxford Examinations. In 1874 he began the study of medicine at Saint Bartholomew's Hospital and received his degree in medicine in 1879. In 1881, he entered the Indian Medical Service. The following year he began investigating malaria with special reference to its spread by mosquitoes. He studied the life history of the parasite and found these parasites in the stomach walls of anopheles mosquitoes that had fed upon the blood of malaria patients. He established the fact that the spores of these parasites were concentrated in the salivary gland of the insect, and proved once and for all that the mosquito is the means of transmitting malaria from one person to another, that mosquitoes could not generate malaria but could act only as an intermediary host between patient and patient. In 1902, he received the Nobel Prize in medicine as a reward for this, one of the great discoveries in medicine of all time.

In 1899, Dr. Ross retired from the Indian Medical Service and went to Africa to continue the study of malaria-bearing mosquitoes. Later he joined the Liverpool School of Tropical Medicine as lecturer and soon was made Professor of Tropical Medicine in Liverpool University. In 1913, he became physician for Tropical Diseases in King's College, London, and a little later Director-in-Chief of the Ross Institute and Hospital for Tropical Diseases. During the World War he was general consultant for the prevention and control of malaria.

Dr. Ross' literary career ran concurrently with his medical research. It will be remembered that he joined the Indian Medical Service in 1881 and in the preface of his In Exile he says: "These verses were written in India between the years 1881 and 1899, mostly during my researches on malaria." He says further that after he had been in India for seven years: "I began to be drawn toward certain thoughts which from the first had occurred to me in my profession, especially as to the cause of the wide-spread sickness and the great misery and decadence of the people of India. Racked by poverty, swept by epidemics, housed in hovels, ruled by superstitions, they presented the spectacle of an ancient civilization fallen for centuries into decay. Since the time of the early mathematicians science had died; and since that of the great temples art had become ornament, and religion dogma." It was this humanitarian attitude that spurred Ross on in his investigations to find the cause of malaria—one of the most widespread causes for the physical and mental degeneration which he saw around him.

After fifteen years of unrelenting research into the method of transmission of malaria, on August 20th, 1897, he solved the problem. The next day, rejoicing over his final success, he gave expression to his feelings in these verses:

This day relenting God
Hath placed within my hand
A wondrous thing; and God
Be praised. At His command

Seeking His secret deeds
With tears and toiling breath
I find thy cunning seeds,
O million-murdering Death.

I know this little thing
A myriad men will save.
O Death, where is thy sting,
Thy victory, O Grave!

Before Thy feet I fall,
Lord, who made high my fate;
For in the mighty small
Thou showd'st the mighty great.

Henceforth I will resound
But praises unto Thee;
Tho' I was beat and bound,
Thou gav'st me victory.

Tho' in these depths of night
Deep-dungeon'd I was hurl'd,
Thou sentest me a light
Wherewith to mend the world.

O exile, while thine eyes
Were weary with the night
Thou weeped'st; now arise
And bless the Lord of Light.

The first edition of In Exile appeared in 1906. It was a small edition and intended primarily for circulation among the friends of the author. In 1910, the second edition of In Exile, in which were included other poems was published, all under the title of Philosophies. In 1919 was published another book of poems entitled Psychologies.

In 1930, Dr. Ross published a volume of lyrics under the title Lyra Modulata. However, as early as 1911 Dr. Ross had fifty copies of this work printed to distribute to his friends as Christmas gifts.

Likewise, in 1907, Dr. Ross had privately printed a limited number of copies of his Fables and in 1928 this collection was reprinted, together with verses written since the first publication and several satires which had been published in 1911 under the title The Setting Sun—all these were combined and published under the title Fables and Satires.

Not confining himself to scientific research and poetry, Dr. Ross also wrote three first-class novels. His first novel, The Child of Ocean, appeared in 1889—eight years after beginning his medical practice in the Indian Medical Service; his second, The Spirit of Storm, appeared in 1896; his third, The Revels of Oscera, a medieval romance, was written in 1895 but did not appear in print until 1920.

Thus this versatile man was doing scientific research and writing poetry and prose all at the same time.

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D. ..... Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP ..... Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. ..... Charlotte, N. C.

Dentistry

J. H. GUION, D.D.S. ..... Charlotte, N. C.

Urology

HAMILTON W. McKAY, M.D.
ROBERT W. McKAY, M.D. ..... Charlotte, N. C.

Internal Medicine

GEORGE R. WILKINSON, M.D. ..... Greenville, S. C.

Surgery

GEO. H. BUNCH, M.D. ..... Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D. ..... Danville, Va.
IVAN M. PROCTER, M.D. ..... Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D. ..... Richmond, Va.
G. CARLYLE COOKE, M.D. ..... Winston-Salem, N. C.

Pediatrics

G. W. KUTSCHER, JR., M.D. ..... Asheville, N. C.

General Practice

J. L. HAMNER, M.D. ..... Mannboro, Va.
W. J. LACKEY, M.D. ..... Fallston, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D.
R. P. MOREHEAD, B.S., M.A., M.D. ..... Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D. ..... Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D. ..... Greensboro, N. C.

Public Health

N. THOS. ENNETT, M.D. ..... Greenville, N. C.

Radiology

Therapeutics

J. F. NASH, M.D. ..... Saint Pauls, N. C.

Tuberculosis

JOHN DONNELLY, M.D. ..... Charlotte, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

THE GENERAL PRACTITIONER THE GOAT UNDER SOCIALIZED MEDICINE

THIS journal has repeatedly called attention of all who would lend ear or eye to two pertinent facts as to plans of the Unco Guid for socializing medicine—1) general practitioners would be the chief sufferers, 2) general practitioners' names are conspiciously absent from the lists of "prominent doctors" advocating the change.

The membership of the now defunct Committee on the Costs of Medical Care included 17 doctors engaged more or less in the private practice of medicine and surgery. Only one of these was a general practitioner. And that Committee said general practitioners did and should do 80 to 85% of the practice!

The group of two or three hundred, preponderatingly New Englanders, whose opinions and activities are so loudly applauded by Bernarr Macfadden (spelling not quaranteed) is made up mostly of specialists.

But, you may ask: Should not the voice of the specialists prevail in matters medical? Do not specialists know more about medical care and its lack than general practitioners? The answer to both questions is a loud No.

Jefferson said he learned about how it was with the peasants of France by looking into their pots and lying on their beds. So the family doctor knows how it is with those to whom he ministers. He is in their bosoms.

Certainly in this section of our country there is no reason for complaint as to the attitude of the specialists toward socialized medicine. Still it should be kept before the public 1) that most of those "prominent doctors" we read of as advocates of Hitler's system of rendering medical care are in no way engaged in or identified with the private practice of medicine; 2) that four of every five of the few of these few who are dependent on private patients for a livelihood are specialists; 3) that most systems of socialized medicine now being practiced do not include the services of specialists; and that 4) as evidenced by a brief abstract in this issue, in the countries which have the systems so highly touted by our medical reformers: "Even in the low income group, the people go to the panel or state physicians for all of their minor or chronic things, but if they can possibly afford it, they go to the specialists or physicians not in the state system when they have any serious affliction."

And these medical reformers continue to ignore the low morbidity and mortality rate in the U. S.

under our present system of medical care and the general satisfaction of our people with the present system.

Silicosis

A lot has been said and written about silicosis in recent years. Many lawsuits involving large sums have been brought, and many more are on the calendars. Any condition that makes a person pant for breath on slight exertion has a dramatic value with the populace second only to back injuries with implication of impairment of capacity for or enjoyment of sexual intercourse.

In a recent issue of one of our best exchanges the *status praesens* is presented in a way to serve the many who need to add to their knowledge of this subject to be able to meet this problem of their practice.

It is unfortunate that deaths from silicosis are not listed separately, being included in the "all other" respiratory disease conditions. From a half-million to a million is the estimate of the number exposed to silica dust in the industries.

Seventeen States and the D. C. have added silicosis to their lists of diseases coming under the Compensation Acts. Engineering efforts have reduced injurious exposure tremendously.

Physical examination, including x-ray, should be made as a preliminary to employment in this field of industry, repeated every two years.

Studies in the last few years, having been extended to places in which the dust is not so thick or so largely free silica, have shown that the clinical and x-ray picture varies with the composition of the dust. There is a general belief among observers that silica in the lungs, in the absence of tubercle infection, produces little disability. The high death rate the world over among silica workers is significant.

The use of the x-rays is the chief means of arriving at a diagnosis of silicosis. Such a diagnosis after exposure of less than a year is open to grave suspicion.

Estimation of disability can best be made by the examining physician familiar with all the circumstances. Estimation of lung capacity, oxygen consumption and rapidity of blood flow through the lungs are often helpful.

"Degree of disability is not proportional to the extent and severity of the anatomical changes observed in the x-ray picture."

In the numerous silicosis investigations no undue prevalence of heart disease has been found in association with silicosis.

1. A. J. Lanza New York, in *Ohio State Medical Journal*, Sept.

DOCTOR J. DACOSTA HIGHSMITH

James DaCosta Highsmith, was born August 31st, 1890, at Fayetteville, N. C., took his premedical work at Wake Forest College, and after a year at the Medical College of Virginia and three at Jefferson was graduated in Medicine in 1918.

He served an internship at the Hospital of the Protestant Episcopal Church, Philadelphia, 1918-1919, and as assistant surgeon to Dr. J. F. Highsmith, Sr., and surgical resident, Highsmith Hospital, Fayetteville, 1919-1924. Post-graduate work in surgery and urology at the New York Post-Graduate, courses in laboratory surgical technique at Augustana Hospital and in regional anesthesia at New York University, at Mayo Clinic for one or two weeks yearly from 1920 to 1928 and study in Europe in 1937, and at the Royal Infirmary and University of Edinburgh in 1938 gave him exceptional training for his life work.

He was a member of his county, State and National medical organizations, of the Tri-State Medical Association of the Carolinas and Virginia, the North Carolina Surgeons' Club, and was a charter member of the Southeastern Surgical Congress. Fellowship in the American College of Surgeons was awarded in 1925.

Dr. Highsmith became superintendent of Highsmith Hospital on the death of his father in June of this year and it was while attending his hospital duties that death came suddenly and unexpectedly on October 18th.

It is a singular circumstance that two of the pioneer builders of hospitals for North Carolina, Dr. D. T. Taylor and Dr. J. F. Highsmith, have had doctor sons follow them to the grave within a few months, and that each of these pioneer surgeons has two doctor sons still remaining to carry on the work in their father's hospitals.

Medical Society of South Carolina.—This body of doctors was organized in 1789, when there were only three State Medical Societies—those of New Jersey (1766), Delaware (1780), and Massachusetts (1781). With the reorganization of the doctors of the U. S., the State body in S. C. assumed the name of the South Carolina Medical Association, and Charleston County doctors retained the name of the organization effected a century-and-a-half ago. On December 5th the Founding of the Venerable Medical Society of South Carolina will be fittiugly celebrated.

Dr. William Bull. The first native of the present U. S. to receive the degree of Doctor of Medicine was William Bull, born in 1710 at Ashley Hall, near Charles Town, S. C., and graduate dat Leyden in 1734. He was first a member of the Assembly under the Lords Proprietors, later a member of the King's Council, and five times Governor and Commander-in-Chief of the Province. —*E. Podolsky*, in *Ohio State Med. Jl.*

BOOKS

TWILIGHT OF MAN, by Ernest Albert Hooton Coward-McCann and G. P. Putnam's Sons, New York City. $3.00.

Professor Hooton of Harvard University's Department of Anthropology wrote a book a while ago entitled *Apes, Men and Morons.* Apparently authorship was more fun than professorship (or should it be professorhood?); for he has followed it with another volume in somewhat similar vein, though with the rather gloomy heading, *Twilight of Man.* He packs three hundred odd (some of them very odd indeed) pages with wisecracks, amazing home-made illustrations, and what looks to a layman like pretty sound anthropology, all totting up to the conclusion that evolution has turned into devolution, and the human race is in a pretty bad way.

The reader is led to believe that if folks would stop persecuting the pessimistic man of science for telling them the truth about themselves, and would begin to indulge in a rigorous course of selective breeding, it might stem the disastrous run toward the bank of oblivion over which he confidently, almost cheerfully, sees them about to hurl themselves.

The fact that the author has adopted the indolent man's plan of making a book by piecing together a number of speeches he has delivered here and there accounts for a certain lack of logical presentation. He is however to be congratulated for bringing a difficult subject out of the graduate seminar and tossing it lightly to the man in the street—whether that worthy catches it or not, is something else again. His serious illustrations of types of the different races, are helpful to anyone who really wants to learn their various characteristics.

—*FRANK HOWARD RICHARDSON, M.D., F.A.C.P.*, Brooklyn, New York and Black Mountain, North Carolina.

DIAGNOSTIC SIGNS, REFLEXES AND SYNDROMES: Standardized by Wm. Egbert Robertson, M.D., F.A.C.P., Visiting Physician, Medical Division, Philadelphia General Hospital and Harold S. Robertson, B.S., M.D., F.A.C.P., Instructor in Medicine, University of Pennsylvania. *F. A. Davis Company,* Philadelphia. 1939. $3.50.

Truly the authors say there is both a lack of and a need for such a book, and truly they might have said that they have supplied the lack. And they have brought order out of the confusion as to the naming and the significance of the different reactions.

Use of the book will help a doctor often to arrive at a diagnosis; oftener to understand what the medical obscurantists are talking about.

INJURIES OF THE NERVOUS SYSTEM, Including Poisonings, by Otto Marburg, M.D., Clinical Professor of Neurology, Columbia University, formerly director of Neurologisches Institut Der Universitat Wien and Max Helfand, M.D., Assistant Clinical Professor of Neurology and Psychiatry, Columbia University. *Veritas Press,* 250 West 57th Street, New York City. 1939. $3.00.

The authors have undertaken to collect all of the important data on the effects of injuries to the nervous system, and to set them forth in this book.

Causes, symptoms, diagnosis and treatment of injuries to brain, spinal cord and peripheral nerves are covered. Certain occupational injuries involving other systems are presented.

It is a good, useful little book. In the next edition we hope not to be told that "headache is a most frequent symptom."

STEDMAN'S PRACTICAL MEDICAL DICTIONARY, of words used in Medicine with their derivation and pronunciation, including Dental, Veterinary, Chemical Bontanical, Electrical, Life Insurance and other special terms; Anatomical tables of Titles in General Use; the terms sanctioned by the Basle Anatomical Convention; The New British Anatomical Nomenclature; Pharmaceutical Preparations Official in the U. S. and British Pharmacopoeias and comprehensive lists of Synonyms, by Thomas Lathrop Stedman, A.M., M.D., Editor of the Twentieth Century Practice of Medicine; of the Reference Handbook of The Medical Sciences; formerly Editor of The Medical Record and Stanley Thomas Garber, B.S., M.D. Fourteenth, revised edition, with etymologic and orthographic rules. The Williams & Wilkins Company, Baltimore. 1939. $7.50 with thumb index; $7.00 without thumb index.

We gladly welcome each new edition of Stedman. All that is claimed for it in the long title is true. The scholarship that Dr. Thomas L. Stedman put into the earlier editions is continued, since his death more than a year ago, by the work of his nephew, Dr. Stanley T. Garber.

It would be hard to do justice to the book. We find no fault in it.

TEXTBOOK OF NERVOUS DISEASES, by Robert Bing, Professor of Neurology, University of Basel, Switzerland. Translated and Enlarged by Webb Haymaker, Assistant Clinical Professor of Neurology and Lecturer in Neuro-anatomy, University of California. From the fifth German edition, with 207 illustrations including 9 in color. *The C. V. Mosby Co.,* St. Louis, 1939. $10.00.

The author says he has attempted the exposition and interpretation of facts rather than of devious hypotheses. In the very first chapter he launches into clinical medicine with a discussion of diseases

of the peripheral nerves. No rehash of anatomy and physiology. This is a textbook of clinical medicine. The prolonged use of alcohol is given as a frequent cause of neuritis. Various tests are described, with their interpretation. Two-per cent encatropine is said to be better than 1-per cent homatropine for dilating the pupils preliminary to ophthalmoscopic examination. Our knowledge of the way in which neuralgia is produced is still meager; in the great majority of cases the nerves appear normal on microscopic examination. Attention is given to the symptom neuralgia. The first item under treatment of diseases of the peripheral nerves is dietary and vitamin treatment. The ordinary analgesics, general and local, are well regarded. Trichlorethylene by inhalation is recommended—1 to 4 one-c. c. frangible tubes, broken in a handkerchief, daily, for 6 weeks or so. Also it said that many neuralgias are relieved and cured by cold packs to the face. It may be necessary to resort to surgical measures.

Tremors, contractures, spasms, athetoses and paralysis agitans are discussed entertainingly. In the last named condition hyoscine is the best palliative drug. In the management of many of these diseases *no excess* should be our guide.

In pernicious anemia the development of combined degeneration may be prevented by liver therapy. Ergotin is sometimes of value in tabetic bladder paresis. Strychnine always has a beneficial action on tabetics. Also valuable nonspecifics are arsenic, iron and electricity. Fever therapy is the only method of value in general paralysis. Much attention is paid to arteriosclerosis of the brain and spinal cord.

Anterior poliomyelitis has no pathognomonic signs. Best treatment is rest, as nearly absolute as possible to maintain. The giving of serum is justified. After the acute stage strychnine should be given daily. It is highly important to differentiate at the outset between cerebral hemorrhage and vascular occlusion. Means of doing this are given. Aphasia, apraxia and agnosia are defined and described. There are excellent chapters on brain tumors, brain abscess and meningitis; on cerebral degenerations and scleroses and on diseases of the endocrine glands.

Most textbooks on nervous diseases are dry-as-dust and have hardly a word of encouragement as to treatment. Bing is entertaining and believes in treatment. We're for Bing.

SYNOPSIS OF PEDIATRICS, by JOHN ZAHORSKY, A. B., M. D., F. A. C. P., Professor of Pediatrics and Director of the Department of Pediatrics, St. Louis University School of Medicine, and Pediatrician-in-Chief to the St. Mary's Group of Hospitals; assisted by T. S. ZAHORSKY, B. S., M. D., Instructor in Pediatrics, St. Louis University School of Medicine, and Assistant Pediatrician to the St. Mary's Group of Hospitals. Third edition. *The C. V. Mosby Co.*, St. Louis. 1939. $4.00.

It is astonishing how well a subject may be covered in a small book when the authors know their subject thoroughly. An excellent book, which contains no fads, but is the result of long experience of the right sort, based on sound instruction in the fundamentals, this, in its turn, based on sound reasoning powers.

FRACTURES, by PAUL E. MAGNUSON, M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School, Attending Surgeon, Passavant Memorial Hospital, and Wesley Memorial Hospital, Chicago. Third edition, revised and enlarged, 317 illustrations. *J. B. Lippincott Company*, Philadelphia, Montreal, London. 1939. $5.00.

The objective has been to write a book to meet the needs of the man who first sees the fracture.

The book opens with a chapter on fundamentals, the first of which is "Splint 'em where they lie;" others deal with shock, hemorrhage, study of muscle pull, frequent checking with x-ray, constant watching of fixation, attention to painful points.

First-aid treatment is described briefly yet adequately, and a list of standard emergency equipment given. Gentleness is stressed. Drainage and plating, reasons for poor reduction, splints and plaster casts are considered as their importance demands.

All common fractures and dislocations are described with preferred mode of management. Recent developments have caused much revising and rewriting.

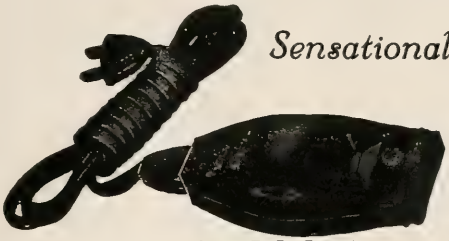
Directions are given for postoperative care. This includes electrotherapy, massage, exercise and muscle reëducation under water. Frames and braces, bone grafts and examination in alleged disability are covered.

The book is explicit in its directions as to how to diagnose and treat in this field. It maintains the viewpoint of the man on the spot with the job on his hands. Those who go to Magnuson for instruction and guidance will not be disappointed.

PSYCHOBIOLOGY AND PSYCHIATRY: A Textbook of Normal and Abnormal Human Behavior, by WENDELL MUNCIE, M. D., Associate Professor of Psychiatry, Johns Hopkins University, Assistant Psychiatrist, Henry Phipps Psychiatric Clinic Johns Hopkins Hospital; with a foreword by ADOLPH MYER, M. D., LL. D., Sc. D., Henry Phipps Professor of Psychiatry and Director of the Department of Psychiatry, Johns Hopkins University. With 69 illustrations. The *C. V. Mosby Co.*, St. Louis. 1939. $8.00.

By psychobiology is meant the study of what is taken to be normal behavior. This is the foundation of the study of psychiatry—abnormal behavior. A great many of the unusual terms used are defined, as the legal phrase goes "within the

Shaver Corporation of America



Sensational offer of only 2,500

ELECTREX

This Shaver was advertised and sold by leading stores from $10 *to* $12.50

OUR SPECIAL PRICE $3.00

Postpaid

Operates on A. C. or D. C. Current
GUARANTEED
This is not a Vibrator Shaver—but a genuine motor job.

Here are six outstanding features of this famous Electric Dry Shaver:

1. SHAVES CLOSER! The Electrex's new shearing mechanism cuts the hair of the beard at the surface of the skin. It is impossible to cut the face.
2. NO BREAKING IN! No practice period required. The Electrex cuts at the natural angle to which shavers are accustomed. Used efficiently and comfortably from the start.
3. NO PULL ON BEARD! The Electrex shaves easily, painlessly and without any after effects of skin irritation.
4. COMFORT GRIP! It is designed and shaped to fit the hand comfortably while shaving in any position.
5. NEW TYPE HEAD! Safety leader guards prepare the hair of the beard effectively by projecting them at the correct angle for the Electrex's new shearing mechanism.
6. SAVES TIME! Shaves any beard no matter how tough in less time than any other dry shaver on the market. Enjoys the advantage of a separable connector.

Here's the secret of the closest and smoothest shave

NATURAL SHAVING STROKE. The Electrex Shaves at the natural angle to which all men are accustomed.

SHEARING MECHANISM cuts hair at skin line—no metal between skin and shearing blade. Delivers close and comfortable shave.

SMOOTHEST MOTOR and most powerful. It gives the smoothest shave of all electric dry shavers.

NEW SPECIAL CHANNELS catch and hold cut hair until removed which eliminates its falling on clothes or body.

IT'S THE IDEAL SHAVER FOR WOMEN! Removes the long, soft hair of women safely and cleanly without skin irritation and without stimulating hair growth.

Get your supply for Xmas now

SHAVER CORPORATION OF AMERICA, 800 Broad Street, Newark, New Jersey Dept. S. M.

Enclosed please find $..... for which send me ..... Genuine Lifetime Electrex Dry Shaver with Genuine Leather or silk case, cleaner, directions and guarantee. It is understood that this is the same Shaver that was advertised and sold formerly from $10 to $12.50.

Name ..... Address .....

City ..... State .....

meaning of this act." The work of Freud, of Adler, of Jung, of Watson, of Pavlov, and of others is evaluated. Student's personality studies, principally autobiographical, are revealing. Common pronouncements on the "harm from unsatisfied desire," the evils of "repression," the need for free expression are called misleading catchwords. The historical account of ideas of the cause of abnormal behavior and of means for dealing with it is brief yet sufficient. The history is well called "the indirect examination." Examination methods and "detailed studies" are given in great detail. Nearly a hundred pages are filled with directions as to treatment. "An important factor in treatment is the patient's responsibility for his own trouble." This is a variable quantity. The physician must judge the degree to which responsibility for the therapy should be allotted to patient, to society and to himself. Methods of treatment are outlined and then the outlines are filled out. A good deal is said for Cloetta mixture, a combination of seven very active drugs.

The author has taken cognizance of the need for a minimum of many of the favorite terms of many psychiatrists which are so confusing to other readers; and he has written a book which will prove a great help to doctors who are earnestly seeking to treat their patients as wholes.

Anal-Sed

Analgesic, Sedative and Antipyretic

Affords relief in migraine, headache, sciatica and neuralgia. Rheumatic symptoms are frequently relieved by a few doses.

Description

Contains 3½ grains of Amidopyrine, ½ grain of Caffeine Hydrobromide and 15 grains of Potassium Bromide to the teaspoonful.

Dosage

The usual dose ranges from one to two teaspoonfuls in a little water.

How Supplied

In pints and gallons to physicians and druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*
Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U.S. on request

NEWS

Buncombe County Medical Society

On October 2nd the 17th meeting of the year was called to order by President Griffin, at Appalachian Hall, at 8 p. m., 51 members present.

Guests were introduced by Dr. J. B. Green (Dr. Chapman) and President Griffith, (Drs. Hackney and Frances).

Dr. Griffin, then explained that the meeting was a combined meeting of the County Society and the Staffs of the Aston Park, Biltmore, Mission and St. Joseph hospitals Speakers were then heard in order: Dr J. B. Anderson, Aston Park, reported case of Botulism; Dro. J. A. Moore, Biltmore, discussed Bronchoscopy; Dr. S. Weizenblatt, Mission, presented a case of Wilson's Disease; Dr. W. C. McGuffin, St. Joseph, a case report of Rickets.

Dr. Roy Roberts, then defended himself against an accusation that his work in the Venercal Disease Clinic represented socialized medicine. Dr. Schaffle responded to his remarks.

Dr. Griffin, then extended an invitation to the Society to partake of refreshments supplied by the various hospitals.

In the absence of President Griffin, Vice President, Craddock called to order the 16th meeting at the City Hall, September 18th, at 8 p. m., 33 members present.

Dr. Mark Griffin introduced the speaker of the evening, Dr. J. W. Davis, of Statesville, N. C., who spoke on Fractures of the Hip—lantern slides, steel pins and black board demonstrations. Drs. Saunders, Mears and Clark discussed Dr. Davis' paper.

Dr. Ward, as chairman of the P. H. & L. Committee moved, Dr. Freeman, seconded, that a sum of $50 be contributed to Attorney Merrimon to support in the prosecution of an alleged quack. Motion was passed unanimously.

Dr. R. A. White then read a letter from Dr. Hamilton McKay, of Charlotte, congratulating the Society on the monthly Bulletin and requesting information relative to its function. This letter was turned over to the secretary.

Dr. Ward, then moved, Dr. Hollyday seconded, that a resolution committee be appointed by the president to draw up suitable resolutions on the death of Dr. L. L. Williams on September 17th. This motion was passed.

Notes of appreciation from the families of the late Mr. S. C. Gillespie and Dr. Howard Sumner were presented.

Dr Schaffle turned over to the secretary a detailed report of the 1939 Tuberculosis Seminar.

—G. W. KUTSCHER, JR., Secretary.

Fifth District (N. C.) Medical Society

Sanatorium, October 26th met at 4:00 p. m.

Program:

Pneumo-Peritoneum, Dr. F. T. Harper; Acute Nephritis in Children, Dr. Angus McBryde; Typhus Fever, Col. G. D. Chunn, N. S. A.; Splenomegaly, Dr. J. W. Tankersley.

Also in attendance were the president, Dr. William Allan, and secretary-treasurer, Dr. T. W. M. Long, of the State Medical Society.

The Ladies Auxiliary of the Fifth District Medical Society arranged an interesting and instructive program.—*SEAVY HIGHSMITH, President. O. L. McFADYEN, Secretary.*

Dr. Joseph Blalock, Superintendent of the Southwestern State (Va.) Hospital, gave the third orientation talk at Marion College November 2nd. Dr. Blalock indicated that

THEOCALCIN BILHUBER-KNOLL CORP.

FOR the failing heart of middle life give Theocalcin beginning with 2 or 3 tablets t. i. d., with meals. After relief is obtained, the comfort of the patient may be continued with smaller doses. Strengthens heart action, diminishes congestion and dyspnoea ...

THEOCALCIN (theobromine-calcium salicylate) *Council Accepted*

A Well Tolerated Myocardial Stimulant and Diuretic
Available in 7½ grain tablets and as a Powder ...

KNOLL BILHUBER BILHUBER-KNOLL CORP. ORANGE, NEW JERSEY.

each individual possesses more mental assets than liabilities and that one should emphasize the assets rather than brood upon the liabilities.

Every individual has feelings of inferiority, Faulty reactions tend to become habitual and should be guarded against constantly. Personality traits such as stubbornness, evasion and the like, may be overcome when attention is given to them. A long-continued antagonism or resentment always works disaster for the individual. Bitterness and hatred should be talked out or removed in some way from the personality.

Dr. Blalock classified individuals into four groups: those who have normal minds, those who have personality disorders, those who are suffering from neurosis and those who are afflicted with psychosis.

DR. ROBERT WILSON, Dean of the Medical College of the State of South Carolina, has received another distinctive honor. The American Legion has awarded him their plaque for distinguished service to South Carolina. —*The Medical Recorder*, Columbia.

DR. H. C. NEBLETT, Charlotte, attended a course in ophthalmology at the Cooke County Hospital, Chicago, in late September and early October.

DR. HARRY TAYLOR, Medical Missionary for several years at Nanking, China, spoke to the Woman's Auxiliary of Christ Church in Petersburg on October 24th.

DR. MILTON E. KIRKPATRICK, Worcester, Massachusetts, of the National Committee for Mental Hygiene, discussed Child Guidance in the World of Today at the meeting in celebration of the fifteenth anniversary of the founding of the Children's Memorial Clinic in Richmond on October 23rd.

THE MEDICAL SOCIETY OF VIRGINIA and the WEST VIRGINIA STATE MEDICAL ASSOCIATION will hold a joint meeting at White Sulphur Springs in 1940. The leading editorial of the West Virginia Medical Journal for Noverber promises "a program of unsurpassing merit."

DR. W. THOMAS PARROTT, Kinston, has been elected superintendent of the Caswell Training School (for the feebleminded), in succession to the late Dr. F. M. Register.

DR. RUFUS A. MORISON, Abingdon, Virginia, has been appointed a member of the General Hospital Board by Governor Price.

MARRIED

Dr. Norman Ellis Sartorius, Jr., Pocomoke City, Maryland, and Miss Sara Elizabeth Harding, Richmond, were married on October 28th.

Dr. Robert H. Groh and Miss Pauline Satterwhite, of Washington City, were married on October 2nd.

Dr. J. W. Jervey, and Miss Maude Hammond Lewis, both of Greenville, S. C., October 19th.

Dr. John F. Rainey, Greenville, S. C., and Miss Caroline Freeman Stringer, Anderson, S. C., October 28th.

Dr. Angus McDonald, of Charlotte, and Miss Mary Letty Mebane, of Greensboro, N. C., October 19th.

Dr. William A. Harris and Miss Mattie Puckett, of Spottsylvania, Virginia, were married on October 18th.

Dr. John Austin Ryan, Ann Arbor, Michigan, and Miss Alma Lloyd Ranson, Charlotte, were married in Durham on November 4th.

DEATHS

Dr. H. W. Knight, of Rutherford County, N. C., died at Rutherford Hospital, of heart disease November 3rd. Dr. Knight served for many years in India and was a Captain (retired) in the Indian Medical Services. For the past ten years or so he had conducted a private practice in rural Rutherford and taken an active interest in agriculture and public affairs.

Dr. Frank L. Herman, 79, of Conover, N. C., died of a heart attack after a weeks indisposition, on October 28th. Among his surviving children are two physicians—Dr. C. B. Herman, of Statesville, N. C.; and Dr. Emery Herman, of La Grange, Ga.; and two nurses—Miss Margaret Herman, of the Duke University Hospital Staff; and Mrs. Herbert Park, of Raleigh.

THE STATUS OF OPHTHALMOLOGISTS AND OTOLARYNGOLOGISTS IN STATE MEDICAL SYSTEM

(S. B. CHASE, Fort Dodge, in *Jl. Iowa State Med. Soc.*, Sept.)

Even in the low income group, the people go to the panel or state physicians for all of their minor or chronic things, but if they can possibly afford it, they go to the specialists or physicians not in the state system when they have any serious affliction. This results in the fields of all specialists being somewhat crowded, in comparison to this country.

DIET—I have found it well not to use that word and to speak of good food instead.—*P. W. Brown.*

INHALANT No. 77

An Ephedrine Compound used as an inhalant and spray, in infections, congested and irritated conditions of the nose and throat. Relieves pain and congestion, preventing infection, and promotes sinus ventilation and drainage without irritation.

Description

Inhalant No. 77 contains Ephedrine, Menthol, and essentials oils in a Paraffin oil.

Application

Can be sprayed or dropped into the nose as directed by the Physician.

Supplied

In 1 ounce, 4 ounce and 16 ounce bottles.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

OUR MEDICAL SCHOOLS

MEDICAL COLLEGE OF VIRGINIA

Dr. William B. Porter, Professor of Medicine, has been elected President of the American Clinical and Climatological Association.

Dr. Rolland J. Main, Associate Professor of Physiology, has written a book on The Care of a Small Rat Colony, which has been published by the *C. V. Mosby Company.*

The college has been lent 250 milligrams of radium for use in cancer work by the National Cancer Institute of the United States. With this loan the college now has 500 milligrams of radium available at all times.

Dr. Ina C. Hall, an Assistant Director of the Hospital Division, has been granted a leave of absence to take graduate work in hospital administration at the University of Chicago for a year.

The Kiwanis Club of Richmond has established a loan fund for aid to senior students of the college. This fund of $1000.00 will be of great help to needy students.

Dr. Lewis E. Jarrett, Director of the Hospital Division, attended the annual meeting of the American Hospital Association in Toronto.

The college inaugurated a series of broadcasts over the radio station W. R. V. A. on October 7th. President Sanger made the first talk; this will be followed by talks by the four deans and others of the college faculty.

Mr. Wortley F. Rudd, Dean of the School of Pharmacy, has been appointed Chairman of the Policy Program of the American Pharmaceutical Association. The next annual meeting of this association is scheduled for Richmond in May, 1940.

Dr. William T .Sanger, President, and Dr. Lee E. Sutton, Jr., Dean of the Medical School, attended the annual meeting of the Association of American Medical Colleges in Cincinnati, October 23rd-25th.

Dr. Walter E. Vest of Huntington, West Virginia, was a recent college visitor.

PROPHYLACTIC TUBE, RUBBER SHEATH AND PROPHYLACTIC STATION

(R. A. BACHMANN, Newport, R. I., in *Med. Rec.*, Nov. 1st)

An ideal prophylactic tube should:

1. Contain at least 3 gms. of ointment
2. Have safety tip 1¼ in. long

Ointment:

3. 1/3rd calomel
4. Yield a clear zone of no less than 5 mm. against a staphylococcus aureus culture of a resistance yielding a 1-2 mm. clear zone with a 1-80 phenol solution when tested by F. D. A. agar-plate method.
5. Kill staphylococcus aureus in 1 hr., using F. D. A. wet-filter-paper test.
6. Nonpoisonous—to avoid accident and prevent suicide
7. Colorless to prevent staining of cloths and thus hindering its use
8. Not irritate, to avoid possible injury to urethra. Rabbit eye test can be used
9. Odorless to avoid unpleasant, tell-tale odors about person.

Now to consider condoms. In recent years the use of *natural* rubber, has become much more extensive. This permits of a thinner texture and is not so subject to climatic changes, but is more easily attacked by fats, and as most codoms are used in conjunction with various fatty salves for the purpose of lubrication, the danger of breakage is very great.

Those sheaths made of *treated* rubber withstand the solvent action of fats better, but are more subject to the

IN ACUTE OTITIS MEDIA . . .

For Those Lesions

of the drum head and the middle ear—that are characterized by edema and infiltration. . .

Auralgan

is respectfully suggested as an efficient therapeutic agent.

AURALGAN acts physiologically by depleting the involved tissues of their excess fluid, and does not produce traumatic chemical changes in the superficial epithelium of the drum.

The Doho Chemical Corporation New York - Montreal - London

deteriorating influence of heat, age and moisture. Condoms must be purchased before exposure to infection. Most dangerous contracts occur without premeditation, and so no sheath is available. Prophylactic tubes are used after and thus become more practical.

A good prophylactic sheath should:

1. Be dated by the manufacturer
2. Be tested, only those purchased in the open market 3 mos. after the date stamped upon them taken for this purpose
3. Stand inflation to 1 cu. ft., preferably with smoke, or to a length of 1 ft. and hold this inflation for 1 min.
4. Have no blisters, spots or other visible defects.
5. Stand inflation to a 6 in. diameter 30 min. after being rubbed on the outer surface with petrolatum and hold this inflation for 5 min.

The tubes which the Navy used when it achieved a reputation for being able to protect its personnel from veneral diseases were the original tubes devised by me, a Navy product which was banned from ships by Mr. Josephus Daniels, erstwhile Secretary of the Navy.

Sir Kenelm Digby and His "Choice Receipts"

(K. F. Russell, Melbourne, *Aust. & New Zealand Jl. of Surg.*, July)

He was educated at Oxford and on the Continent and fought against the Venetians at the head of his own squadron of ships. On returning to England he was imprisoned by Parliament; his release having been effected, he retired to France and was made Chancellor to the Queen Mother. He returned to London during the rule of Cromwell.

After the Restoration he was appointed one of the Council of the newly formed Royal Society, which post he filled until death in 1665.

His "Choice Receipts" reflect adversely on the credulity of his fellow men; but in his time powdered vipers, human skull bone and animal excreta were present in the official pharmacopoeia!

The spelling and phraseology have been left as they appear in the book.

For the King's-Evil

A most contumacious foul inveterate King's evil (several times touched by the King, and wrought upon by the best chyrurgeons and given over as desperate) was perfectly cured thus:

Take Garden-snails that have white or gray houses upon them, and beat them in a Mortar with a little Parsly into consistence of a Plaster, and so apply it to the sore or sores, and change it for a fresh every twenty four hours. This is good to take away the raging pain of the Gowt.

A Certain Remedy for the Retention of Urine

Make a strong decoction of Horse-radish Roots in white wine, put to it a little Hares Wool dryed in powder. Drink of this Decoction morning and night. You will see the effects of it speedily.

An Experimented Remedy for the Stone

A certain Person at Rome was sick of a great stone in his bladder, who after many Remedies (taken in vain) was resolved to be cut; having agreed with the Operator, this following Remedy was propsed to him by a Priest who had made trial upon himself and many others. It is thus.

Take a good quantity of Millepedes, wash them with white wine, then put them into a glased Pot; Lute and close it well, and set it in an oven to dry the Millepedes: Then reduce them to fine Powder; then put to this Powder as much White Wine as it will drink up; then put it in the oven again as before. Then take this powder, and mix it with it with strawberrie-water, and a scruple of Oyl of Vitriol, and dry once more in the oven; then keep it in a Glass close stopped. Of this powder the patient took four scruples and half an ounce of Aquavitae mixt with some fit Broath in the morning fasting; the effect of it was thus: The patient found himself in great pain and was much tormented, for the space of two hours; And after five hours passed he made a little urine but very thick. The second day having taken this Medicine again, his urine was much thicker than the first. The third day he avoided a great deal of sand. And on the ninth day the Patient was perfectly cured from his stone.

Another approved Remedy for the stone and Gravel, and for Strangury of Urine: Take the fat of a Buck Rabbit, melt it, and Anoint the Back and Reins with it. This will open the passage of Urine wonderfully. A child was cured with this; so that in twenty four hours it made four Pots full of Urine.

An Oyntment for Burning

Take Cowsdung, and put to it a sufficient quantity of Sein-

doux (Hogs-grease), fry or boyl them together till they are well incorporated: Then strain the liquor through a napkin; and when it is cold, you will have a green Ointment: which is excellent for Burnings. ffi

For a Fellon

Take Garden-snails, and beat them in a Mortar, shels and bodies and all, till they be smooth and like an Uniform Urgent; then apply this like a Poultise, and when it beginneth to stinck, (which it will do in a few hours) change it. This will cure in two or three days.

An Expedite and Sure Cure for the Gonorrhoea

Purgent the patient very well three or four times, and give him soothing Emulsions. Then take Venice Turpentine, wash it well with Rose-water, and make it into a reasonably thick body for Bolus's with subtile Powder of Mastick; about the fourth part will serve. Take of this every morning fasting two or three drams, and drink upon it a good draught of new milk, if you sup not. Do the like at night going to bed You will be well in ten or twelve days.

An Approved Remedy for Ruptures

A child was cured of a Rupture thus: Take Cow Dung, warm it well before a fire and so lay it as a Cataplasm upon leather, and strow upon it some Cummin-seeds, and so apply it hot to the Rupture: When it is grown cold, put on a new one. This course they continued two days (in bed) and the child was perfectly cured, and also many others. It is excellent, especially when it is Hernia Ventosa.

Glycocoll to Prevent, Delay or Reduce Fatigue

Muscular fatigue may be minimized or postponed by inclusion in the diet of 4 to 10 Gm. of glycocoll (aminoacetic acid, glycine) daily. Greater capacity for physical exertion of 33% and 80%, when but 6 Gm. of the amino-acid were taken each day. More pronounced increases in physical vigor have been reported in patients afflicted with the frank muscular dystrophies and glycocoll has also been found of benefit in anorexia and infantile malnutrition, and obscure allergic conditions.

Ray and his associates conclude that men, when given adequate amounts of glycocoll, are invariably able to increase the amount of work produced before fatigue sets in—37 to 240%.

Glycolixir is a tonic elixir developed by the Squibb Laboratories to supply a suitable pharmaceutical preparation of glycocoll. Available as Elixir (Glycolixir) or as Tablets (Glycolixir Tablets). In general, 3 tablespoonfuls of the Elixir daily (each tablespoonful containing 1.85 Gm. Glycocoll Squibb) will present sufficient glycocoll (5.55 Gm.) for optimal therapeutic response. Six Glycolixir Tablets daily (each containing 1.0 Gm. Glycocoll Squibb) supply approximately the same quantity (6.0 Gm.) of Glycolixir as 3 tablespoonfuls of the Elixir. Glycolixir Tablets may be preferable where ever the small amount o falcohol in the Elixir (12 per cent) is undesirable.

Treatment of Deafness and Contiguous Nerve Disorders With Prostigmin

(T. C. Davis & J. C. Rommel, Philadelphia, in *Clin. Med. & Surg.*, Aug.)

In the autum of 1936 we began using Prostigmin hypodermically in treating deafness. It improved the hearing remarkably in some patients. A few of the old, chronic cases recovered reasonably good hearing after a few injections; other similar cases required much more treatment. Early, beginning cases generally recovered after 4 or 5 injections. Tinnitus and vertigo were also cleared. Neuralgia, migraine and trigeminal neuralgia were relieved.

We first used a 1:4000 solution of Prostigmin methyl sulphate, but later increased the strength to 1:2000, which we now inject in all cases.

We tried Prostigmin bromide tablets, by mouth, at first, in severe cases; *alone* they did not seem to help. However, by persistent use of the tablets, we believe that they are a valuable addition to the injections. We now give the tablets 3 times a day, by mouth, and the 1:2000 solution hypodermically, 2 or 3 times a week—1-c. c. doses of a 1:2000 solution, at intervals of every 3rd to every 5th day.

Concentrated Oxygen as a Therapeutic Agent

(C H. Mayo, Rochester, in *W. Va. Med. Jl.*, Nov.)

It has been my practice to give all patients who have undergone an extensive surgical procedure 100% oxygen immediately after operation, with transfusion; convalescence in this group has been comfortable and satisfactory.

Experiments carried out at the Massachusetts Institute of Technology demonstrate that *old-fashioned molasses* is probably the best known food for treating the kind of anaemia that is due to improper diet. Spinach as a source of iron has been thoroughly debunked. Of usable iron, molasses has 6.1 parts per 100,000 parts by weight, spinach only 0.5. Beef liver has 5.6 parts; oatmeal 4.6; apricots, eggs and raisins follow with fewer parts. Only usable iron was estimated, that out of which hemoglobin can be built. Medical studies indicate that nutritional anaemia is much more prevalent than has been suspected. More than 40% of children are thought to have it and the figu es for women may run as high as 70%.—*Science.*

Joseph Lister, Professor of Surgery at Glasgow University, read an article of Pasteur's in a journal and began to wonder what possible connection could exist between wine and wound. He wondered why ordinarily a simple fracture healed without septic complications, whereas the average compound fracture invariably became septic, often resulting in the death of the patient. He started using carbolic-acid spray for killing germs. This was the birth of antiseptic surgery. Antisepsis was later superseded by asepsis.

CHUCKLES

Into a doctor's office came a woman with a bottle, which she handed to the doctor.

"Is this all right to take?" she asked.

The doctor, inspecting the bottle, "You didn't buy this on my advice."

"Oh, no. It's a nerve tonic I saw advertised. I felt dubious about it, and thought you'd tell me whether I ought to take it."

"I don't think," he replied, "there is any necessity for you to take it. There's nothing wrong with your nerve."

A physician received three neckties from a mail order house, with the following letter:

"Dear Doctor, We are taking the liberty of sending you three exceptionally fine ties. Because these ties have the approval of thousands of discriminating dressers, we know you will like them. Please send $2."

Here is the doctor's reply:

"I am taking the liberty of sending you $2.00 worth of extra fine prescriptions. These pills helped thousands and I am sure you will appreciate my thoughtfulness in sending them. This is in full payment for the ties sent me under date of Feb. 3rd."

"Lucinda Cordial!—barren wives
It turns to mothers fair;
And the fond name of "father" gives
To husbands in despair—

At $3 per bottle, or $24 the dozen," fetched the business. —*Medical Record*, Oct. 4th, quoting from newspaper advertisements of 100 years ago.

Mrs. John Huck fell and struck her abdomen. She is in the hospital now with a duodenal ulcer. "A silent ulcer may be activated by injury," I tried to explain. "You mean, retorted John, "there was something silent in her?" —*Roche Review*.

The medical meeting tonight was a waste of time.

1) One "discussant" read a paper longer than the paper he was discussing.
2) Next paper told of 20 cases of schizophrenia in children under six. There are no such cases. He might just as well have claimed 200.
3) Last paper by colleague Fowler on the psychology of lying.—*Roche Review*.

One night wife returned from her vacation. She entered the house quietly so as not to awaken husband. In the stillness resounded the voice of the attractive servant girl: "You haven't shaved today." I related the story, as a moral, to patient Herbert, whose fidelity to his wife is not too stubborn. "Oh, hell," he said, " that nut should have shaved."

A Black Maria is a negro's wife.

A bust is something a lady wears.

A caucus is a dead animal.

A census taker is a man who goes from house to house increasing the population.

An eavesdropper is a kind of bird.

Guerrilla warfare means when the sides get up to monkey tricks.

Icons are what you fatten pigs on under oak trees.

Inertia is the ability to rest.

Preparations for Treating Leather

Glycerine enters extensively into the treatment of leather products to maintain pliability. The formulas given below are examples of usage which should prove widely helpful.

Leather Varnish

Shellac	20
Alcohol	80

Dissolve and mix with a solution of:

Castile soap	2½
Alcohol	32
Glycerine	4

Color with nigrosine or other alcohol-soluble dye as desired.

Leather Cleaner

Powdered castile soap (or any good white milled soap)	6
Water	160

Boil till dissolved and on cooling, add:

Ammonia water	6
Glycerine	14
Ethylene dichloride	7

Leather Renovator

Sperm oil	3 oz.
Acetic acid	3 drams
Glycerine	3 drams
Oil of turpentine	½ oz.
Water, to make	15 oz.

Add this mixture slowly, with constant stirring to the whites of 3 eggs. Add a dye, such as aninine black, dissolved in 3 oz. of alcohol to the mixture.

Care of Rubber Tubes With Glycerine

From the *American Journal of Nursings*—

"The authors (Aquandro and Barbour) found after 37 boilings rubber tubes which had been lubricated with mineral oil were so non-resilient that they were no longer usable: tubes lubricated with glycerine were firm and, though slightly lighter, still resilient after *200* boilings. In these experiments the tubes were lubricated for five minutes with the substance under test. They were then washed with soap solution, rinsed with clear water and boiled for five minutes."

Styptic Cotton for First-Aid Kit

Styptic cotton to stanch the flow of blood after a cut or similar accident should be a part of every plant or office medicine chest and first-aid kit. Prinz, in his "Dental Formulary," recommends this formula:

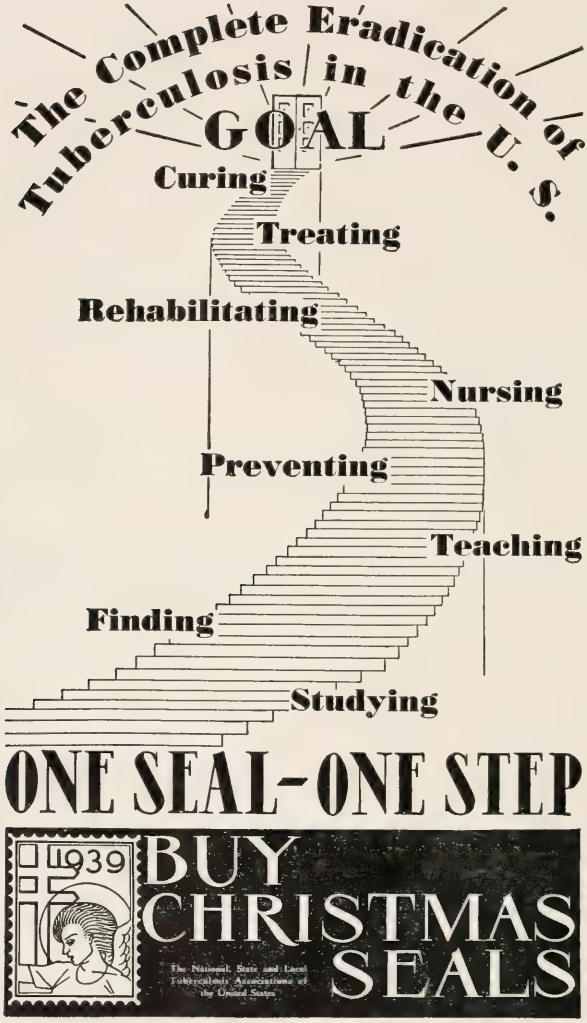
Solution of ferric chloride	80
Glycerine	16
Water	255
Purified cotton	100

All parts by weight.

Mix the liquids and steep the cotton in this for one hour. After this time remove the cotton, press it and spread it to dry out in thin layers, in a warm place, protected from dust and light. When dry, transfer to well closed dark-glass containers.

Eye Lotions With Glycerine

After a long spell at the wheel the eyes are apt to feel gritty and irritated due to the accumulation of dust, dirt, dried tears and oily secretion. A simple, useful eye wash can be made as follows: to a quart of boiling water add a level teaspoonful each of ordinary table salt, bicarbonate of soda, and boric acid and after these have been dissolved, add one tablespoonful of glycerine.


The Complete Eradication of Tuberculosis in the U. S.
GOAL
Curing
Treating
Rehabilitating
Nursing
Preventing
Teaching
Finding
Studying
ONE SEAL-ONE STEP
1939
BUY CHRISTMAS SEALS
The National, State and Local Tuberculosis Associations of the United States

READY DEC. 1st.

A BOOK ON THE CREATION, THE MAINTENANCE AND THE OPERATION OF A SMALL CLINICAL LABORATORY AT SMALL COST.

This book is now on the press.

This book is an answer to the question: How can I arrange to have needed laboratory work done for *all* my patients, and so do the kind of practice I want to do, without making a large outlay, without assuming heavy operating expenses and without heavily burdening my patients?

The author is J. M. Feder, M. D., Pathologist Anderson County Hospital, Anderson S. C. Dr. Feder's wide and diversified experience in this field qualifies him to write on technic and interpretation.

His inventiveness and his skill in improvising are exemplified by the number of small clinical laboratories already created and being operated at small cost, according to his ideas.

CHARLOTTE MEDICAL PRESS,
Charlotte, N. C.

GENERAL

Nalle Clinic Building — 412 North Church Street, Charlotte

THE NALLE CLINIC

Telephone—3-2141 (*If no answer, call* 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
GYNECOLOGY & OBSTETRICS.
EDWARD R. HIPP, M.D.
TRAUMATIC SURGERY
PRESTON NOWLIN, M.D.
PROCTOLOGY & UROLOGY

Consulting Staff

DOCTORS LAFFERTY & BAXTER
RADIOLOGY
HARVEY P. BARRET, M.D.
PATHOLOGY

General Medicine

LUCIUS G. GAGE, M.D.
DIAGNOSIS

LUTHER W. KELLY, M.D.
CARDIO-RESPIRATORY DISEASES

J. R. ADAMS, M.D.
DISEASES OF INFANTS & CHILDREN

W. B. MAYER, M. D.
DERMATOLOGY & SYPHILOLOGY

WADE CLINIC
Wade Building
Hot Springs National Park, Arkansas

H. KING WADE, M. D.	*Urology*
CHARLES S. MOSS, M.D.	*General Surgery*
J. O. BOYDSTONE, M.D.	*General Medicine*
JACK ELLIS, M.D.	*General Medicine*
FRANK M. ADAMS, M.D.	*General Medicine*
N. B. BURCH, M.D.	*Eye, Ear, Nose & Throat*
RAYMOND C. TURK, D.D.S.	*Dental Surgery*
A. W. SCHEER	*X-ray Technician*
ETTA WADE	*Clinical Pathology*
MARY ALICE PHILLIPS	*Clinical Pathology*
MARJORIE WADE	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building **Charlotte**

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building **Charlotte**

HERBERT F. MUNT, M.D.
FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS
Nissen Building **Winston-Salem, N. C.**

Journal
of
SOUTHERN MEDICINE & SURGERY

Vol. CI CHARLOTTE, N. C., DECEMBER, 1939 No. 12

Diabetes and the Use of Protamine Insulin*

ROBERT WILSON, JR., M. D., Charleston, South Carolina
Associate in Medicine, Medical College of the State of South Carolina

DIABETES is a common disease. Joslin estimates that there are approximately 500,000 diabetics in this country—about 1 of every 250 individuals. Statistical studies by Joslin, Dublin and Marks point to a slow but definitely steady increase in the frequency of diabetes, and they estimate that about 2½ million persons, or 2.08% of the general population, will eventually die with diabetes. This increase is more evident in the older groups of the population and perhaps is indicative only of the fact that the average age of our people is advancing. There is no physician in any line of practice who does not come across diabetic problems, and with this general tendency in view, their frequency will doubtless increase.

Diabetes is an old disease and has a long and interesting history. The *Papyrus Ebers* refers to a polyuria, by which ancient physicians may have meant diabetes. Aretaeus the Cappadocian recognized diabetes and wrote an accurate account of its course. He suggested that the word *diabetes* comes from the Greek word meaning siphon; another, and perhaps more accurate, source gives a different explanation of the derivation of the word —that it comes from the Greek word signifying a *compass*. The similarity between the geometrical instrument and the man standing with the legs spread wide apart, the characteristic attitude of the diabetic with polyuria, is said to have been responsible for the naming of the disease. Other landmarks in the history of diabetes were the discovery by Thomas Willis that the urine in diabetes was sweet, and the demonstration by Matthew Dobson that it contained sugar. Later, Mering and Minkowski showed that the removal of the pancreas produced a fatal diabetes in dogs, and Opie in 1900 reported degeneration of the islands of Langerhans as a characteristic pathologic finding in the diabetic. The final and incontrovertible proof that the islet tissue is the seat of the disease was afforded by the study of a case of malignancy of this tissue; an extract of metastatic implants in the liver was found to contain physiologically active insulin.

While diabetes itself is an ancient disease, its thoroughly successful treatment is a very new development. The announcement by Banting and Best a little more than 15 years ago that they had succeeded in preparing an active extract of insulin marked the beginning of a new era in the treatment of diabetes. Previous to the introduction of insulin we had no drug that was effectual in reducing the level of the blood sugar, and the therapeutic management of diabetes was carried out altogether by a dietary regimen. Allen had shown that the carbohydrate tolerance of the diabetic patient must be determined and that his diet must be adjusted within the limits of this tolerance, allowing also for an antiketogenic ratio. Such a diet was often close to the level of starvation and many victims of severe diabetes were unable to live even with the strictest possible dietary management.

Insulin at once proved a boon to the diabetic patient and has been the means of saving countless lives and allowing diabetics to lead more nearly normal lives and to take much more than starvation diets. However, certain disadvantages soon became evident. Regular insulin had to be given by hypodermic. Its effect was short-lived and the dose had to be repeated at frequent intervals, some diabetics having to take several injections a day. Fluctuations in the level of the blood sugar were considerable and severe hypoglycemic reactions were apt to be rather frequent. Investigations quickly began, directed toward the improvement of insulin in 2 ways: first, the elaboration of a product that could be taken by mouth and, second, an insulin that would have a more prolonged effect. The nature of insulin is such that it is destroyed

*A feature of the Piedmont Post Graduate Clinical Assembly at Anderson, S. C., Sept. 19th-21st.

by the digestive secretions and as yet we have no satisfactory product that, taken by mouth, is effectual in reducing the blood sugar and in allowing for increased carbohydrate consumption. But in protamine insulin the first hope of the diabetic has been realized and we now have a product that does have a prolonged effect.

Protamine zinc insulin is a mixture of ordinary insulin with a protamine derived from certain species of fish; the addition of a small amount of zinc has been found to increase its stability to a considerable extent and this is the commercial preparation now available, often referred to simply as protamine insulin. The use of this combination was worked out by a Danish physician, Dr. Hagedorn, and its introduction has marked the beginning of a still newer era in the treatment of diabetes. The only difference between the effect of rgular insulin and that of protamine insulin is that the physiologic activity of the latter is more prolonged. An injection of regular insulin results in a quick response; the peak of its activity in lowering the level of the blood sugar is reached in 2 to 4 hours, and its effect as a rule is completely gone after 4 to 6 hours. With protamine insulin the effect is much slower to start, reaches a peak usually after about 12 hours and continues effective for approximately 24 hours. While some activity of the drug has been shown to be present after 2 full days, for clinical purposes it may be said to last for one day. The difference in the activity of the 2 drugs is probably due to slower absorption of the protamine insulin from the site of its injection.

Protamine insulin does not, of course, obviate all of the disadvantages of regular insulin. It has to be given by hypodermic injection, which is sometimes attended with a little pain. Reactions do occur, although perhaps not quite so frequently or so severely as those following regular insulin. And strict diet is just as necessary as it was before, if the disease condition is to remain under control. However, it does have one major advantage in its prolonged activity, in that a single morning dose often suffices to keep the diabetic entirely sugar-free, even the same individual who had previously required several doses of regular insulin. Another advantage is that the patient does not have to be quite so particular about the exact time of his meals as was previously necessary with regular insulin, and is often able to eat small amounts of food between meals. These advantages are often coupled with better diabetic regulation than was previously possible, and in addition to doing away with the nuisance of insulin injections throughout the day result in allowing the diabetic to dine out with greater ease, become less self-conscious, and in general to lead a more nearly normal life.

The technique of administration of protamine insulin is quite similar to that of regular insulin; however, there are a few differences to be borne in mind. With regular insulin, it is usual to give the drug not more than 15 to 20 minutes before meal time. Using protamine insulin, because of its slower absorbtion, it is preferable for it to be given an hour before breakfast. When regular insulin and protamine insulin are both used for the same patient, the same syringe may be used for both provided the regular insulin is given first. If it is given in the reverse order, small traces of the protamine remaining in the syringe will convert the regular insulin into protamine insulin and the desired effect will be lost. If both are given, the interval between their administration and meal time is best shortened to the usual interval as if using regular insulin alone. Locally, there is apt to be a little more pain following the protamine insulin injection, and the formation of lumps under the skin is quite usual, especially during the first few weeks of its use. However, these tend to become a less prominent feature, and when they do occur they gradually disappear after a time. Both pain and the formation of these lumps can be reduced to a minimum by deeper injection of the drug, holding the syringe more nearly perpendicular to the surface of the skin. And it is quite important to insist that the drug be injected in a different place each day, returning to the same area after an interval of not less than 1 month. If such advice is not followed the irritative effect of the protamine insulin will result in increased fibrous tissue formation, absorption of later injections will be retarded, and diabetic regulation will be considerably disturbed.

There is one major disadvantage in the use of protamine insulin; that is, when it has once been given, it is absolutely necessary that a sufficient amount of carbohydrate be taken in the course of the following 24 hours. If the diabetic patient suddenly develops an acute gastrointestinal upset, perhaps with nausea, vomiting or diarrhea, or if there should appear some surgical or medical emergency which would interfere with his normal food intake, particularly close observation is essential. With regular insulin, witholding subsequent doses was sufficient, but when protamine insulin has been used, if a severe hypoglycemic reaction is to be avoided glucose must be given in some form, possibly by the intravenous route.

It has always been true that the most important single feature of diabetic treatment is its dietary management. This was the only available thera-

peutic measure before the introduction of insulin and even with the use of this drug it remains of supreme importance. Diabetes is essentially a deficiency disease, the lack of intrinsic insulin being its cause. The diabetic person is simply one who is unable to utilize an unlimited supply of carbohydrate food because of his own insulin deficiency. It is therefore necessary to adjust the carbohydrate content of the diet to the particular needs and limitations of the patient. When he becomes unable to utilize this limited supply of carbohydrate, the administration of insulin becomes essential.

In the history of the dietary treatment of diabetes, various types of diet have been advocated at one time or another. A low-carbohydrate, high-fat diet was used early in this century, with some success at times. The dietary plan advocated by Allen was low in all elements of food and was often close to the level of starvation. Since the introduction of insulin the amount of carbohydrate allowed in the average diet has been gradually increased and at the present time a fairly liberal allowance of carbohydrate, with moderate restriction in both fats and proteins, is now regarded as the diet of choice. For all diabetics it now seems wisest never to restrict the daily carbohydrate ration below 100 grams; and 150 grams is probably the best average figure to use, although each patient presents an individual problem and no categoric rule can be laid down. If we give the patient this much carbohydrate he usually feels much better and there is less tendency for him to break his diet than if the carbohydrates are held to too low a level. Also, there is little need of concern over the antiketogenic ratio, as a liberal allowance of carbohydrate with restriction in the total amount of fat will in itself take care of this. Proteins should average about 1 gram per kilo of optimal body weight, except in the growing child where higher allowances become necessary. Fats, I believe, should be held to about 100 grams a day unless there is some special indication for their increase.

The treatment of diabetes is essentially one of trial and error. If such a diet, which would roughly contain 150 grams of carbohydrate, 80 grams of protein and 100 grams of fat (about 1820 cal.) results in undesirable change in weight, an adjustment may be made accordingly until a more favorable ratio is reached. Except for young children and adolescents, it is usually best to try to keep body weight no more than the average and perhaps even a little below. Hence, a moderate degree of undernutrition is often wise, and the patient soon becomes accustomed to a reduced caloric intake. This is especially true with the large number of diabetics in whom obesity was the precipitating factor, and weight loss often results in an increased carbohydrate tolerance, perhaps in the elimination of the need for insulin, and always in better general physical condition.

A tentative diet is at first prescribed with the carbohydrate averaging perhaps about 150 grams a day. If the patient is not able to utilize this much carbohydrate by means of his own intrinsic insulin, the administration of the latter becomes essential. When using regular insulin the carbohydrate allowance was roughly divided into 3 equal parts and insulin given before whichever meal the patient could not completely utilize. With protamine insulin a somewhat different division becomes necessary. If we recall that protamine insulin is usually given in the morning and that its effect is very slowly manifested, it is easy to see that the allowance of carbohydrate at breakfast should be reduced. Using a 150-gram carbohydrate diet as an example, we reserve about 1/10th—15 grams—to be taken at bedtime; of the remaining 135 grams, 1/5th—27 grams—is to be taken at breakfast, and 2/5th—54 grams—at dinner and supper each. If desirable, a small portion may be saved from any meal and taken between that and the next meal. All of the urine is saved and 4 specimens a day are to be examined for sugar, specimens including all urine passed between 1) breakfast and dinner, 2) dinner and supper, 3) supper to bedtime and 4) overnight. Changes in the diet and in the amount of insulin used are made in accordance with the results of Benedict's test. If sugar appears after breakfast, the amount of carbohydrate allowed for this meal may be reduced or a small dose of regular insulin given in addition to the protamine insulin. If sugar persists in the specimens taken later in the day or early the next morning, a reduction in carbohydrate or an increase in the dosage of protamine insulin will usually take care of it very well. However, it is wise not to make changes too rapidly in either diet or insulin, as the full effect of an increased amount of protamine insulin is sometimes not evident for 2 or 3 days; hence, a change every 3 days when indicated is sufficiently often.

I have said very little about blood sugar determinations. Regulation of the level of the blood sugar is, of course, the aim of diabetic treatment, but fortunately it is possible to accomplish this in the usual patient by means of the simpler urinary sugar determinations. I believe an attempt should be made with every patient to form an approximate idea of the renal threshold, by means of a few simultaneous urine and blood sugar tests. If we find that the patient will spill some sugar over into the urine when the blood sugar level reaches about 150 mg., then we know that examination of the urine will be an adequate test. In

those individuals in whom the renal threshold is high, less reliance can be placed on the urine tests, and blood sugar examinations will have to be made more often.

A great deal has been said about the technique of changing the patient from regular insulin to protamine insulin. The first decision to be made is whether such a change is indicated. For the patient who is doing well on a single daily injection of regular insulin and who maintains an essentially normal level of the blood sugar there is no reason to change. It is especially for the one who requires several daily injections of insulin, for the one who is difficult to manage and has considerable fluctuations of the blood sugar, for the one who has frequent reactions with regular insulin, and for the one whose work or mode of life makes it difficult to lead the often hectic existence necessitated by regular insulin: it is for these that protamine insulin is especially useful.

When the decision is made for such a transfer, it may be assumed that approximately the same number of units of protamine insulin will be required, or perhaps very slightly less. It has been suggested that on the first day of changing the usual dose of regular insulin be given before breakfast, and the remaining number of units for the day be given at the same time in the form of protamine insulin. After this, the total daily dosage may be given as protamine insulin. Such a rule is useful and it seems plain to me that any technique more complicated than this is entirely superfluous. To keep the patient's urine entirely sugar-free during the course of the change may be ideal, but the appearance of a little sugar in the urine does no harm and is easily controlled by subsequent changes. Indeed, it is generally safer to underestimate the daily requirement and gradually increase than it is to give too much insulin at the start.

Reactions do occur following protamine insulin. They are said to be less frequent than those following regular insulin, and this has been my own experience, but it is certain that they are often just as severe. One of their very disagreeable features is that they are quite likely to come on in the night. Because of the prolonged activity of protamine insulin and because the peak of its action is reached 12 to 24 hours after injection, reactions most often occur in the early hours of the morning. When they take place in the day, the patient is awake and the premonitory symptoms of hypoglycemia will warn him in time to take a sufficient amount of carbohydrate to abort the attack. However, when they occur at night the patient is apt to be asleep and not to awaken until the severity of the hypoglycemia becomes sufficient to give alarm. Restlessness, sweating, muscular twitching, falling out of bed, and even convulsive seizures occur and must be met promptly. It is certainly unwise for the patient who has severe reactions to live by himself, as prompt attention is often imperative.

The frequency of these reactions can be lessened and they can often be eliminated by insisting on a liberal intake of carbohydrate at bedtime. The importance of this requires that it be stressed, as it may make the difference between frequent reactions and none at all. The patient should take just as much carbohydrate food at supper and on retiring as is compatible with good diabetic regulation. If the patient is subject to nocturnal hypoglycemic attacks, it is much better and safer to have a small amount of sugar in the urine and freedom from attacks, than to insist on maintaining the urine entirely sugar-free. When the attack occurs, the treatment is the immediate administration of carbohydrate. This can usually be given by mouth, but injection of glucose in the vein may be necessary. There is one difference between the treatment of hypoglycemia following protamine insulin and that following regular insulin. With the latter, enough carbohydrate to bring the patient out of the attack is sufficient. With protamine insulin, however, it is necessary to bring him out of the attack and *to keep him out of it as well.* Lapses will occur unless an extra amount of carbohydrate is given, so it is wise to give a quickly absorbed food, such as orange juice, and after the patient has recovered to insist on the administration of a more slowly absorbed carbohydrate food, as milk and bread, in order to prevent an immediate recurrence.

The effect of exercise on the diabetic taking insulin is always to be borne in mind. One of the disadvantages of hospitalization for the initial diabetic regulation is that the patient is usually too quiet, does not get his ordinary quota of exercise, and this change in routine may result in temporary deviations from the normal which would render regulation more difficult. Exercise usually enhances the effect of insulin and tends to lower the blood sugar, probably by stimulating an increased secretion of endogenous insulin. Some patients find that on the days on which they know that they are going to take additional exercise they can reduce by a few units the amount of insulin usually taken and still remain sugar-free. The most important aspect of this question, however, is the fact that undue and unexpected physical exertion may sometimes so quickly reduce the blood sugar that a reaction occurs. Several years ago a well-regulated diabetic patient had to change a tire on his car at 2 p. m. on a midsummer day. It had

taken him about half an hour to do this. Immediately afterwards he fainted, had a convulsion and was carried to the hospital, a typical example of hypoglycemia occurring in a diabetic simply because of unexpected and strenuous exercise. It is wise to remind all diabetics of this possibility and for them always to keep on hand some form of carbohydrate so that they can take it easily if an emergency arises. This is especially true for those who spend a large part of their time driving a car. And before the diabetic voluntarily takes part in some particularly strenuous physical exercise, such as swimming in the surf, I believe it is always wise for him to eat some candy or other quickly absorbed carbohydrate in order to prevent the occurrence of a serious mishap.

Surgical complications in the diabetic taking protamine insulin often present a difficult problem in management, as well as any illness of an acute nature. The patient who has had an abdominal operation and cannot take nourishment by mouth and the patient who is acutely ill with pneumonia or a similar infectious disease is impossible to manage with protamine insulin. The latter should be discontinued at once. Because changes in the condition of these patients are so abrupt they present an individual problem in each case and no set rule can be given for their management. It is wise to examine the urine at frequent intervals, every 2 to 4 hours at least, and to give regular insulin in accordance with the urinary findings. If the Benedict test shows red, 15 units of insulin may be given with safety; if yellow, 10 units; if green, 5 units; if blue, no insulin: this suggestion of Joslin is safe and may be followed easily by the attendant in charge of the patient. Frequent blood sugar determinations are helpful, but if it is already known at approximately what level sugar begins to spill over into the urine, the urinalysis is an excellent and an easy guide. Such plan may well be continued throughout the duration of the acute stage of the illness, and an attempt to resume protamine insulin should be delayed until there is assurance that the patient will be able to continue his usual dietary habits. On the other hand, when surgical complications are such that they do not interfere with the taking of a regular diet, the continued use of protamine insulin is often very helpful in controlling the level of the blood sugar, preventing marked fluctuations, and perhaps in promoting healing more rapid than would otherwise take place.

It has been said that all diabetics should go into a hospital for regulation. This is probably true where hospital facilities are such that a complete diabetic education can be given; but such hospitals are rare indeed. Also, the fact that the diabetic gets no exercise while in the hospital and, above all, the fact that hospital meal hours are not usually those to which he is accustomed at home—these things at times even make hospitalization undesirable.

The most important factor in the eventual well-being of the patient is diabetic education. The physician can and should give this to the patient, and it is his responsibility alone to see that it is done. It takes a great deal of time and patience, particularly in regard to dietary education, but it will pay a large dividend to the patient in a longer and healthier life. The diabetic should always learn to test the urine for sugar. He should learn the symptoms and signs of insulin reactions and he should know what to do when they appear. He should know what to do when sugar persists in the urine, and he should learn some simple dietary facts, the carbohydrate values of his usual foods, and how to substitute one for another. The diabetic patient may be easily taught these things in the office, if the physician will only take the pains to do so; and, whether or not he has available the help of a dietitian, it is the physician's responsibility to see that it is done.

A Method of Timing Heart Murmurs

(Bernard Farfel, Houston, Texas, in *Jl. A. M. A.*, Oct. 28th)

After I have taken the patient's blood pressure, I leave the cuff in place and set the mercury column at about This is done so as to obtain good excursions of the column midway between the systolic and diastolic b. p. readings. with each beat. If one listens to the normal heart, it will be found that the upward excursion of the mercury column is coincident with the second heart sound. In this way one has already established a point at which systole ends. Cabot teaches that the mistaking of systole for diastole would not occur if the physician were sure just when systole takes place. Knowing that the second heart sound and the impulse given to the mercury are coincidental, one should note whether the murmur in question immediately precedes this phenomenon, as would be true of a systolic murmur, or follows it, which would be the case with a diastolic murmur.

The second sound is dependent on aortic tension. That the sudden thrust upward of the mercury should occur at the moment when the second sound takes place may be partially explained physiologically, the rebound of the distended aortic wall at the close of systole, causing the aortic valves to close and forcing the blood along to the periphery.

It will also be observed, in using the method described, that the period during which the mercury falls slightly, just prior to the sudden rise, will usually coincide fairly well with the interval between the first and second sounds, namely systole. The technic given offers another means of timing murmurs.

Cinchophen.—There is no safe method of prescribing cinchophen. Individual hypersensitivity to this drug is not predictable. In certain patients, previous longstanding infection or intoxication, which is responsible for joint pains or a sciatic syndrome, may *already* have produced latent liver damage.—*Lichtman* in *Jl. Mt. Sinai Hosp.*

Thyroid Gland Malignancy and Allied Disorders in the Negro

Report of a Case

Ernest J. Losli, B. A., M. D., Columbia, South Carolina

THE relative susceptibility of the Negro to neoplastic disease has not been satisfactorily proven. Various reports[1 2 3 4] indicate that the Negro has little neoplastic immunity, which varies with different factors.

Thyrotoxicosis and tumors formerly thought to be rare in this race are found with increasing frequency in this country[6 7 8].

Malignant tumors of the thyroid gland are not uncommon in the White race, but apparently rare in the Negro. This view requires further consideration; thus a review of the more recent literature and a case report are offered to supplement and summarize the current findings.

Case Report

A Negro farmer and cotton mill worker, aged 40, was admitted to the Veterans' Administration Facility, Columbia, S. C., on January 15th, 1936. He was born in Waterloo, S. C. There was no history of illness except for gonorrhea prior to his enlistment in the Army in 1917. In his 18 months of enlistment he had pneumonia, influenza and hemorrhoids. In 1931 he was treated for hemorrhoids and anal fistula and felt well for one year. He then had weakness and pain in the rectal region and back, with radiating pains down the legs which disabled him from work. No reference was made to any other condition. He had no cough and his appetite was good.

He was well nourished, weighed 200 pounds, was rational and coöperative. A soft, globular mass the size of a lemon was found under the right sternomastoid muscle, which moved upward and downward with swallowing. Huskiness of voice was noted; also the patient continually tried to clear his throat. The preöperative diagnosis was written down as "Cyst of the Thyroid." He also had enlarged tonsils, pyorrhea, perirectal condylomata and an enlarged boggy prostate gland. Laboratory tests were all essentially negative. On January 29th, 1936, the mass in the right lobe of the thyroid gland was removed. The remainder of the gland was left intact.

The specimen removed at operation was a rounded mass weighing 51 grams (Fig. 1). It appeared well encapsulated by firm fibrous tissue. Beneath the well developed capsule, the firm yellow-grey outer half of the mass surrounded an irregular, dark brown central area, somewhat gelatinous and hemorrhagic.

Fig. 1—Tumor of Thyroid Gland showing well developed capsule and central degeneration.

Microscopic examination: The cortical portion of the tumor was composed of a dense accumulation of atypical cells, interspersed at intervals by vascular spaces (Fig. 2). The cell outlines were indistinct, the cytoplasm slightly granular and acidophilic. Nuclei varied in size, shape and chromatin content. Most of them were round or oval with a fairly uniform chromatin but some were enlarged, polygonal and hyperchromatic. The sinuses were lined by a single layer of endothelial cells or tumor cells. A tendency toward acinar formation was occasionally observed. Nearer the central portion of the tumor the nuclei in general were pale and vacuolated. The center consisted of a relatively acellular collagen in which there was

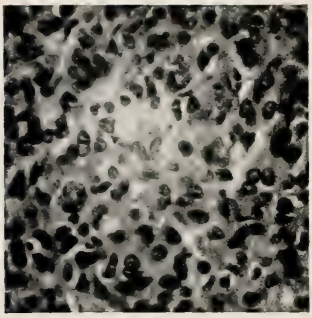


Fig 2—High-power view of the carcinoma of Thyroid Gland, showing the tumor cells in the cortical portion.

hemorrhage and degenerative changes. The cells extending through the fairly dense connective tissue were hyperchromatic, with irregular nuclei and often partially lined the vascular walls (Fig. 3).

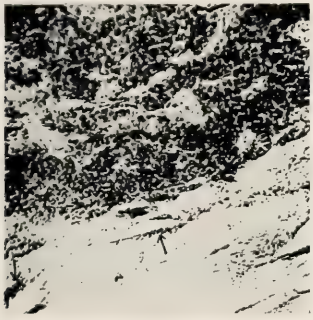


Fig. 3—Cortex and capsule of tumor mass, showing vascular spaces. Arrow indicates tumor cells lining vascular space in capsule.

Here a few atypical acini were occasionally found. A diagnosis of Carcinoma of the Thyroid Gland was confirmed at the Edward Hines Jr. Facility to which he was sent for Röentgen therapy.

Following 6,566 Röntgen units to the right and left aspects of the neck from March 30th to June 8th, a second course was given from October 1st to October 22nd, 1936. There was neither clinical evidence nor local recurrence of the tumor. Three months later, on January 22nd, 1937, he was reädmitted to the Columbia Facility as an emergency. At this time, he was dyspneic and able to speak only in a whisper. X-ray examination of the chest failed to reveal evidence of metastasis. He expired six days later.

Necropsy

Both lobes of the thyroid were firm, decreased in size (30 x 15 mm. each) and firmly adherent to all the surrounding structures which were enmeshed in dense connective tissue. The entire larynx was very edematous. A grey-yellow, necrotic ulceration of the mucous membrane extended upward from the level of the cricoid cartilage to involve both of the vocal cords, mostly the right. Grossly the findings otherwise were unimportant. No metastatic masses were found.

Microscopic sections of the thyroid gland removed at autopsy showed a reduction in the number of acini and a marked increase in dense, irregular connective-tissue septa. Most of the acini were of the involutional type, being enlarged, lined by a single layer of flattened epithelial cells and filled with pink-staining homogeneous colloid substance. Interspersed between these were irregular atypical acini filled with desquamated epithelial cells and a small amount of colloid material. At intervals, within the dense connective tisssue septa, were clusters of hyperchromatic cells which had a tendency toward acinar formation. The perilaryngeal tissues were infiltrated by dense clusters of hyperchromatic cells which also had a tendency to form acini and which were similar in appearance to those within the thyroid septa.

Sections of the other organs failed to reveal any microscopic evidence of metastasis. The main finding was an acute congestion of the thoracic and abdominal organs.

Discussion

In the past it was commonly considered that the Negro race was relatively immune to malignancies of all types, but now the opinion held by most observers is, in general, that they do not have any particular immunity.

des Ligneris[5] and Strachan[9], who reported from lower Africa, stated that there were few reliable statistics available from those regions. The former said that only a small proportion of the sick and dying natives came under the care of qualified doctors. He reported 181 cases of malignancy from 25,543 patients, or 1:141. The incidence of malignancy among the Bantu was given as 18.8 per 100,000, but for Europeans 93. This would indicate a very low incidence of malignancy for the native Negro. From the 1935 United States Census[10] there were 4609.6 per 100,000 deaths in the Negro race as being due to "cancers and other malignant tumors," whereas in the White race it was 10697.9. Beyers[10] found 106 cases of malignancy out of 1901 autopsies of native, or 22.9%. He stated that if it had not been for the high percentage of carcinoma of the liver, the maximum age incidence (30-39) of carcinoma among the Bantu would have corresponded exactly with that of the Europeans (50-59). Vint[21] obtained 23.8% of malignant changes in tissues examined from 2378 Kenyan natives.

Carcinoma of the liver was considered as being the most common cause of tumors in the native while carcinoma of the stomach, breast, genital organs and skin were rather infrequent. Sarcomas were generally found more frequently than carcinoma[4, 9, 10, 11]. The main causes of death in the Negro in the United States in 1935 were the following: Infectious and parasitic diseases, circulatory system, tuberculosis, nervous system, violent and accidental deaths, whereas cancer is well down the list[10].

The change to this country in our consideration of tumors of the Negro gives us different results. Carcinoma of the liver was found less frequently[1]. On the other hand, tumors of the genital organs were more frequent in the Negro of this country than in the natives, and nine times more common in the Negro than in the White race[8]. Vint[13] stated that carcinoma of the stomach was rare in the native but Fitts[4] reported 50 cases to show that it was as frequent in the Negro of this country as in the White race. All are agreed that there was less malignancy of the skin in the Negro, apparently due to the more resistant structure, or other inherent variations. Maes and McFetridge[3] found that less than 10% of all carcinoma of the cheek, nose, lip, mouth and tongue occurred in the Negro.

The variations in the incidence of malignancy are thought to be due to the change in environment and habits of the Negro from his native country. Holmes[2] refers to it as a disease of civilization. It has been difficult to give an exact estimate of malignancy in the genuine Negro of this country, as it was estimated that of the twelve million Negroes in the United States, about one-fifth have White or Aryan blood. Venereal pelvic inflammations and change in food habits were considered as possible causes for the increase in the number of pelvic and gastric tumors[4, 8].

Thyrotoxicosis or nodular goitre have been generally considered as having preceded the malignant changes of the thyroid. Maes and McFetridge[3] over a period of ten years in Louisiana found 613 cases of all varieties of the thyroid disease with a Negro ratio of 44.3%. The toxic type formed about 50% of the Negro cases. The nodular variety was more frequent than the diffuse. Hermann[6] also found a large percentage of goitres in Negroes, and was of the opinion that there was no evidence of any racial immunity. Jones of Georgia[12], in a relatively non-goitrous area, believed that there were fewer cases of goitre in the Negro than in the White race, while Cohn of New Orleans[13] stated that he had seen cases that belonged to practically every type.

Heretofore, malignancy of the thyroid gland in the Negro apparently has not been given a separate consideration. In the 1935 census[10] on the causes of death, this condition was listed under "Cancer of Other or Unspecified Organs." Life insurance companies do not have any separate statistics regarding the mortality or incidence of malignancy of the thyroid in the Negro. From a total of 18,000 Bantu in-patients, or 106 malignancies, Beyers[10] reported one case of malignant disease of the thyroid. des Ligneris[5] found one out of a total of 84 malignancies, and Vint[13] one out of 277 cases of carcinoma or 632 tumors of all types. Shallow, Lemmond and Saleeby[14] report 24 cases of malignancy of the thyroid and stated that they had noticed an absence of the colored patient.

Kenneth Lynch[17] stated that he had on record five cases, which were in the course of preparation for report, of carcinoma of the thyroid in Negroes.

The frequency of malignancy of the thyroid in the White race varied from 0.37% to 7.45% of all malignant growths[15, 16]. The reason for this variation was pointed out by Wilson[18] as being due mainly to geographical considerations.

The case reported is the only malignancy of the thyroid found at this hospital over a period of seven years, from more than 17,000 admissions, less than half of which were colored.

Summary

Because of the variable data in regards to neoplasms in the Negro, the more recent literature has been reviewed. The infrequency of malignancy of the thyroid tends to give the impression that it is rare in this race. A case report of Thyroid Malignancy in the Negro is submitted. It appears that except for the skin the Negro is as susceptible to malignancy as the White race, in the same environment. This probably holds true for the thyroid gland. Due to the dilution of the Negro race, only approximate data can be obtained.

Bibliography

1. Hoffman, Frederick L.: Cancer in North American Negro, *Am. J. Surg.* 14: 229-293. Oct., 1931.
2. Holmes, S. J.: Differential Mortality from Cancer in White and Colored Population, *Am. J. Cancer* 25: 358-376. Oct. 1935.
3. Maes, Urban and McFetridge, Elizabeth M.: Racial Trends of the Negro and White in Certain Surgical Diseases. *Am. J. Surg.* 33: 5-17, July 1936.
4. Fitts, F. J.: Cancer of Stomach in the Southern Negro, *South. M. J.* 24: 110-111, Feb. 1931.
5. des Ligneris, M. J. A.: Cancer in South African Natives, *South African M. J.* 10: 478-485, July 1936.
6. Hermann, Louis G.: Thyrotoxicosis in the Negro, *Surg. Gyn. & Obs.* 55: 221, Aug. 1932.
7. Harris, Erle W.: Goitre in the Negro Race, *Tri-State M. J.* 1: 80. 1929.
8. Witherspoon, J. Thornwell and Butler, Virginia W.: Etiology of Uterine Fibroids, with Special Reference to Frequency of their Occurrence in the Negro, *Surg. Gyn. & Obs.*, 58: 57. Jan. 1931.

9. Strachan, A. Sutherland: Observations on the Incidence of Malignant Disease in South African Natives, *J. Path. & Bact.* 39: 209-211 July 1934.
10. Beyers, F. C.: Review of Incidence of Surgical Diseases Among Bantu Races of South Africa, *Cancer Review*, Vol. 111, 6: 294, 1928
11. Vint, F. W.: Malignant Disease in the Native of Kenya, *Lancet* 2: 628-630, Sept. 1935.
12. Jones, E. G.: Goitre in the Southeast, *J. A. M. A.* 71: 712, 1918.
13. Cohn, Isadore: Thyroid Disease in the Negro, *South. Surgeon*, 4: 416-421, Dec. 1935.
14. Shallow, Thomas A., and Lemmon, W. T. and Saleeby, Eli: Malignant Neoplasm of the Thyroid. *Ann. Surg.* 101: 1190-1194, May 1935.
15. Schreiner, Bernard F. and Murphy, Walter T.: Malignant Neoplasms of the Thyroid Gland, *Ann. Surg.* 99: 116-125, Jan. 1934.
16. Toland, C. G.: Cancer of the Thyroid, *Surg. Gyn. & Obs.* 40: 579-581, 1925.
17. Lynch, Kenneth: Personal communication to the author. In preparation for publication.
18. Wilson, L. B.: Malignant Tumors of the Thyroid, *Ann. Surg.* 74: 129, 1921.
19. Vital Statistics: Special Report Dept. of Commerce, Bureau of Census. Oct. 28, 1937, Vol. 3, No. 39, P-213-226.

Conservative Treatment of the Tonsils

(F. A. Wier, Racine, Wis., in *Clin. Med. & Surg.*, Nov.)

After removing tonsils surgically for 20 years (and sometimes not doing it particularly well), and having seen the effects of surgical removal by many other good and bad operators, I wonder if, in fairness to the patient, we are justified in continuing this practice indiscriminately.

If one is not so obsessed with the idea that a tonsil must be removed even for one pus pocket, one might think of other methods of evacuating these pus pockets. It can be done, and the method is very simple.

Paint the tonsils and pillars with a 20% cocaine solution, using a long, curved metal applicator with a screw tip, so that the cotton cannot slip off and choke the patient. Tease out a strip of cotton 5 in. long and 2 in. wide; lay the applicator in the median line, half the length of the cotton; fold the end over the applicator; then slip the cotton off the end of the applicator ½ in. This makes a soft ball on the end, that will not gouge the tissues. Twist the cotton just back of the ball. This makes an ideal applicator.

Dip the applicator in the cocaine solution, squeeze it nearly dry so that the patient will not swallow any cocaine, and paint the tonsils *systematically*—first the pillars, from the superior to the inferior pole, pressing under the edges; then the whole tonsil. If the patient is gaggy, paint the uvula and back of the tongue, as this is the gagging area. Repeat this procedure 3 times, at 5-min. intervals, after which the patient will be docile and the anesthesia sufficient for any minor operation.

With a tongue depressor, preferably the ring-finger type, instruct the patient in the art of holding his own tongue down and away from the tonsil. The trick is to depress the tip and elevate the hand a little. Have him practice this a few times, until he gets over his nervousness. A little extra time and patience is worth the trouble.

Apply the tonsil sucker (which consists of a glass tube with a cup on one end and a rubber bulb on the other) with the bulb compressed firmly over the tonsil, and release the bulb. The tonsil will be sucked into the cup and its contents, pus and debris, evacuated. Repeat this operation until no more debris appears in the cup.

With an applicator similar to the first, only of much smaller caliber, bend the tip, 1 in. from the end, at a right angle; apply a small bit of cotton, as I have described; dip this into a 50% silver nitrate solution, squeeze nearly dry (use an old rubber glove or a piece of rubber dam, so as not to stain the fingers), so that the solution will not run into the hypopharynx and cause distressing retching; insert the tip into the crypt as far as possible and, with a rotary motion, thoroughly scrub the interior of the crypt, using a fresh bit of cotton for each crypt.

With a clean index finger, palpate the center of the tonsil, while making pressure with the first and second fingers of the other hand under the tubercle of the lower jaw. If there is a deep-seated pus pocket, it is usually in this position and may have no connection with a crypt. If such a pocket is found, use a blunt tonsil knife, pressed deep into an adjoining crypt if possible, and cut through the center into a crypt on the opposite side, if possible. One may be rewarded by an ooze of thick pus, which is contained in a capsule. Use the sucker throughly, and scrub the cavity well with the silver nitrate solution, using a larger swab this time.

Usually one such treatment is all that is necessary. However, *examine the tonsils a week later*, use the sucker (no anesthetic is necessary) and, if no pus or debris is extracted at this time, discharge the patient, with a request that he return in 3 mos. for a check-up. Use the sucker again, and if no debris is found, tell him to forget all about a tonsillectomy.

The method I have described is especially indicated in children, in whom the whole lymphatic system is highly developed; but we remove only the glands in the pharynx. Why no tremove *all of the glands*? The tonsils are among the most important immunity glands in the body and, in my opinion, they have an internal secretion that is necessary for the wellbeing of the child.

The method in children is essentially the same as that for adults, except that, under the age of 10 years, we must give them just enough ether to relax the throat. The operation can be done quickly and safely.

In many children, deafness is caused by adenoid tissue in the fossa of Rosenmuller obstructing the opening to the eustachian tube, preventing proper ventilation and drainage, and also subjecting the child to the danger of acute otitis media. This area can be thoroughly examined with a clean index finger and, if an undue amount of adenoid tissue is found, it should be removed with a small LaForce adenotome, and the tissue over the eustachian eminence removed with the finger nail. *Never us a curette!* It is a dangerous instrument, even in the hands of an expert.

Large firey tonsils in children, in early spring, that I have treated by this method after their school was out, on examination before school reopened were perfectly normal and about ½ their former size. Some of these children have now grown into big huskies and still have their tonsils, and I think they are better off.

I have failed to see any of the alleged benefits from the indiscriminate removal of teeth and tonsils in arthritis and allied conditions.

Relief of chest pain by nitroglycerin is not diagnostic of coronary involvement.—*R. L. Gorrell.*

Lead in the urine indicates lead absorption only, and in the absence of other signs and symptoms is of itself insufficient diagnostic evidence of lead poisoning.—*Fiarhall & Sayers* in *Pub. Health Rep.*, Nov 10th.

A Consideration of the Pathogenesis and Certain Other Factors in Diabetes Mellitus*

Paul F. Whitaker, M. D., and Kirby P. Turrentine, M. D.,
Kinston, North Carolina

DIABETES is a disease of increasing frequency. Wilder reports that in 1920 diabetes occurred in less than .66% of all new cases registered at The Mayo Clinic, whereas, in 1936 it occurred in nearly 2%. A survey of hospital beds in the State of Massachusetts in 1929 revealed the fact that 1.06% were occupied by patients affected with diabetes. The death rate in the United States has risen from 16 per 100,000 in 1929 to 22.2 per 100,000 in 1937. In the light of these figures it would seem that your committee has made a very apt selection of a topic for a round-table discussion.

Most preventive and therapeutic efforts in disease are based on a study of the etiologic factors. Unfortunately, in diabetes mellitus the pathogenesis, to say nothing of the etiology, is far from clear, and many of the findings on this phase of the subject are both contradictory and confusing.

Therefore, a brief review of some of the facts, particularly those recently presented, would seem appropriate, and an attempt should be made to arrive at a satisfactory working conception of the disease from the standpoint of pathogenesis. Post-mortem findings on diabetics are often inconsistent with the clinical pictures of the disease. For example, in some severe cases of diabetes the islands of Langerhans are of normal size, number and appearance, while in others of few and slight or even no diabetic symptoms, gross pancreatic lesions are found. In addition to the more or less paradoxical post-mortem findings we are confused further by the recent observations of Houssay, Long and Lukens and Soskin and Mirsky as to the role that the pituitary, adrenals and liver play in diabetes. Recognized clinical conditions of the thyroid and pituitary with their resulting altered physiology have been known for sometime to affect both normal carbohydrate metabolism and diabetes. How the glands act and interact and how their various functions are related to those of the islet cells is a highly involved and far-from-settled question.

Out of all the recent contributions to the knowledge of the physiology of the pituitary and adrenals it can be safely stated that they have to do with the regulation of blood sugar through their antagonistic action to insulin and that they influence the intensity or severity of diabetes. Houssay's hypophysectomized-pancreatectomized dogs and Long's adrenalectomized-pancreatectomized dogs are not free from diabetes as has been stated. When fed abundantly they develop glycosuria of practically the same degree as that of animals who have been subjected to pancreatectomy only. Furthermore, it is only with the greatest difficulty that diabetes is produced by injection of extracts of the pituitary or adrenal glands into normal animals. Young has recently accomplished this, but only with amounts of hormone far in excess of those to be anticipated in pituitary disease. The result of injection of smaller doses of the pituitary hormone is to produce only a transitory elevation of blood sugar. In addition the diabetes of acromegaly differs only in being more variable, and that seen in basophilic tumors of the pituitary and in carcinoma of the adrenal cortex is usually benign, but has no other unusual features.

As to the role of the thyroid in diabetes, it is known that hyperthyroidism increases the intensity of the disease while hypothyroidism diminishes it. This is probably explainable on the increase or decrease of metabolism with its resulting increased or decreased demand for insulin. The observations regarding thyroid disease in diabetes were made by Pemberton, Foster and Wilder and confirmed by Schnitker.

In addition to Soskin and Mirsky, Lande and Pollock and also Hinesworth have made certain observations on hepatic disease and function in relation to sugar tolerance and diabetes. From perusal of their reports it is difficult to believe that true hepatogenous diabetes occurs, and the fact that glycosuria occurs in cases of severe hepatic damage merely shows that the liver must be capable of removing glucose from the blood stream to prevent glycosuria when the rate of supply is greater than can be normally tolerated.

In the light of the foregoing brief summary of the influence of the various factors mentioned there is temptation to depart from the unitarian theory whereby diabetes was attributed originally to disorder of the pancreas, and consider that the disturbance lies in some other part of the endo-

*Presented as part of a Symposium on Diabetes before a regional meeting of The American College of Physicians, Chapel Hill, N. C., October. 20th, 1939

crine and nervous system concerned in holding the blood sugar within the normally accepted bounds. It must be remembered, however, that there is no single feature of diabetic metabolism that is not corrected by insulin in correct dosage. Moreover, total ablation of the pancreas in experimental animals is the only way in which diabetes can always be induced and, lastly, it is important to remember that the normal pancreas possesses an enormous factor of safety. Minkowski and Allen found that as much as nine-tenths of the pancreas of dogs must be removed before the capacity of the organ to metabolize carbohydrates was interfered with.

These facts: 1st, that diabetes is completely corrected by the administration of insulin; 2nd, that diabetes in normal man and animals can be produced only by near complete destruction of insulin mechanism, and 3rd, that while diseases and conditions which precipitate diabetes do so in only a limited number of cases, taken together they permit of only one conclusion. The normal pancreas must and does possess the ability to meet any demands that can be made of it by an antagonistic pituitary or adrenal and even extensive damage to itself.

Endocrine, nervous, hepatic, emotional and climatic conditions influence diabetes, but none of the recent evidence adduced affects the question of the primary cause of diabetes. It seems that adherence to the original theory of diabetes as originally maintained by Naunyn offers a clearer conception of the disease to the man in practice upon which to base his treatment than all of the contradictory and confusing evidence of recent date. The etiology is primarily in the function of pancreas though admittedly affected by other factors. Naunyn felt that with rare exceptions the primary cause of diabetes is an inborn biologic inferiority, primarily of the insular reserve. The pancreatic reserve represents the capacity of the pancreas to endure strain. The exhaustion of the reserve results in decompensation or insufficiency of the original capacity to make insulin. As in the heart, so in the pancreas, the recovery of normal function after decompensation is rare. The thesis of inborn biologic inferiority maintained by Naunyn is now accepted by Umber, by Woodyatt, by Joslin with certain reservations, and even to a certain extent by Houssay.

Consideration of diabetes as a condition resulting from insufficient capacity to form insulin is both understandable and helpful in the theory and practice of the disease. At the same time it must be kept in mind that the disease may be affected by a multiplicity of factors.

The importance of heredity in diabetes is well known and was first commented upon by Morton in 1696. Pincue and White have studied 675 family histories on this phase of the subject. Joslin reports that 24.5 per cent of diabetics give a positive family history. An interesting family in this regard has been under the observation and care of one of us. A mother and four of a family of five children are all diabetics. The non-diabetic member is at present 26 years of age. He will probably develop diabetes. The father of these children was diabetic and his father, their paternal grandfather, was also diabetic. A brother and a sister of the father were also diabetic. This evidence of diabetes existing in three generations is authentic. The grandfather, father, aunt and uncle were under the care of the father of one of the writers in the days before insulin. The mother and four children have been managed by the writers. The non-diabetic child is now married and has a three-year-old son. It will be interesting to see if he and his child become diabetics.

Any condition that is capable of intensifying an already existing case of diabetes is also capable of provoking the disease in those predisposed to it. These precipitating conditions fall into two classes. In the first class are conditions that may actually destroy the islet tissue in the pancreas and thus diminish the production of insulin. Examples are acute and chronic pancreatitis, possibly syphilitic pancreatitis, pancreatic stone, pancreatic neoplasm, fibrosis of the pancreas resulting from infection or arteriosclerosis and hemochromeatosis. Cholecystic disease is probably the most common single cause of chronic pancreatitis.

In the second class are those disturbances of metabolism which create a greater demand for insulin and thus impose a greater strain on the island cells. Under this category are hyperthyroidism, acromegaly and other types of hyperpituitarism and the adrenal cortical syndrome. Here also should be placed those organic and functional disturbances of the central and autonomic nervous system which provoke glycosuria.

Conditions in the first class need no further comment. Under conditions in the second class we have already discussed diseases of the thyroid gland and have mentioned hyperpituitarism, basophilic tumors of the pituitary, acromegaly and the adrenal cortical syndrome. Broadly speaking these conditions create more work for the pancreas by providing an over-supply of hormones, normally antagonistic to the action of insulin. It is possible that some cases of diabetes are affected by hyperfunction of those glands without associated anatomic abnormality. For practical purposes, however, this possibility may be dismissed.

In addition to endocrine factors it is well known

that diabetes occurs more frequently in the obese. There is no definite explanation for this. Dr. Wilder of the Mayo Clinic suggests that while there is no actual increase in the basal metabolic rate as commonly expressed, there is an actual increased heat production due to the increased surface area and the actual functioning tissue of the body undergoes an increase in metabolism. This results in an increased demand for insulin which, kept up over a period of time, results in exhaustion of the pancreatic reserve.

The influence of the weather on the occurrence and the severity of diabetes has been commented on extensively by Mills and Peterson. It would seem that diabetes is more prevalent in regions of the earth where climatic disturbances are severe. For example, diabetes occurs frequently among Jews. These people are originally from the relatively mild climate of the Mediterranean and when they move to more severe climates in different portions of the world they are more prone to develop diabetes. It has also been observed that Southern negroes who have moved to the Northern states to make their home are more prone to develop diabetes than those who remain in the South. Furthermore, diabetic patients from the North find the disease less troublesome when they move to warmer climates. It would seem then that the heat and energy needs of individuals are greater in more rigorous climates. There is an increasing demand as a result on the physiology of the pancreas.

In biologically inferior individuals this increased demand for insulin results finally in pancreatic decompensation.

There has been considerable discussion as to whether or not a high consumption of sugar precipitates the development of diabetes in those predisposed to the disease. The evidence is confusing. The blood sugar level is more rapidly raised by sugar than by any other food and there is, of course, an increased demand for insulin. On the other hand there is evidence to indicate that sensitivity to insulin is increased by meals rich in carbohydrates. This is perhaps effected by inhibition of the pituitary activity. Our consumption of sugar in the United States has not increased in recent years and in the Scandinavian countries, where there is a great per capita consumption of sugar, the incidence of diabetes is relatively low. A possible partial explanation of diabetes in countries in which there is a high consumption of sugar and of highly milled flour is that there is a deficiency of vitamines of the B complex.

There are certain other precipitating factors in diabetes which have been particularly emphasized by Dr. Woodyatt of Chicago. He states that severe nervous shocks such as those that result from injury or exposure precede the onset of diabetes in a fairly large number of cases. The same is true of physical shocks and severe emotional disturbances. Depressive emotions, anxiety, fears and unhappiness arising from various causes are notoriously capable of provoking the onset.

These conditions cause a more or less continuous stimulation of the autonomic nervous system with its resulting strain on pancreatic function. Over a period of time it may lead to pancreatic decompensation.

SUMMARY

A survey of literature relative to the etiology and pathogenesis of diabetes has been attempted. Much of the evidence presented, particularly that having to do with endocrine influence, is both contradictory and confusing. The influence of climate and certain other factors has been discussed briefly, and finally an attempt has been made to correlate the different data into a satisfactory working hypothesis.

LIPOID PNEUMONIA: OILS MAY BE DISASTROUS

(J. F. KAHLER, Des Moines, Iowa, in *J. Iowa State Med. Soc.*, Nov.)

The popular conception that lipoid pneumonia is a rare disease is an error. Increasing numbers of cases are being reported each year. Most of these are not diagnosed during life because of the insidious onset, the afebrile course and the absence or paucity of lung signs and symptoms. Approximately 2/3rds of the recorded cases are in children.

Lipoid pneumonia occurs usually in one of four classes of cases: 1st, patients of any age with some central nervous system involvement (meningitis, brain tumor, coma, etc.); 2nd, patients, usually small infants, with debilitating diseases or those in which repeated vomiting occurs; 3rd, patients to whom oils (cod liver oil, etc.) are given against resistance; and 4th, patients, usually adults, who use oils over long periods of time as nasal douches, laryngeal sprays and lubricants.

In general, the vegetable oils produce the least reaction. Lipiodol, used commonly for radiographic purposes, seldom excites untoward results, although 2 cases of lipoid pneumonia have been reported from its use. In each of these some secondary factor caused the permanent retention of the oil in the lungs. All of the animal oils produce a marked reaction of an exudative type. Mineral oil acts in the lung as a foreign body. It is readily emulsified and produces a granulomatous response.

TO MY KNOWLEDGE boys have given up their chosen life work, girls their prospect of marriage, business men their favorite projects because of a false diagnosis of heart disease. The fears, disappointments and ailments resulting from such a diagnosis may be enough to render a person's life miserable. And all this one can sweep away by a clear and positive reassurance based on a thorough examination. I know few greater services that a physician can perform, few that give him livelier satisfaction.—*R. C. Cabot.*

HEART DISEASE.—Those who think or fear they have heart disease usually turn out on careful examination to be free from it.—*R. C. Cabot.*

Syphilis of the Cardiovascular System*

H. C. Whims, M. D., Rutherfordton, North Carolina

THE successful diagnosis and treatment of all special aspects of late syphilis lies in the detection and effective treatment of early syphilis in general. Syphilis is essentially a disease of the nervous and cardiovascular systems, although it affects other organs. The syphilologist should be a cardiologist, and neurologist, instead of a dermatologist.

Cardiovascular syphilis is insidious in its onset and disastrous in its outcome. The early signs of cardiac involvement from syphilis are hidden, symptoms are mild or absent. In 105 autopsies of uncomplicated cases of syphilitic aortitis the clinical diagnosis was correctly made in only four during life and in 13 more it was suspected that something was wrong with the aorta. On the basis of the symptoms and physical signs recorded, the diagnosis might have been correctly made in 35 additional cases. Thirty-four patients died with hearts and aortas thought to be clinically normal. A physician must be alert to find and recognize the signs of mild cardiovascular syphilis early enough to start treatment at a time when its detection means some hope of recovery and not merely a veiled death sentence.

Cardiovascular syphilis occurs frequently. Stokes estimated cardiovascular syphilis constitutes 10 to 15% of all cardiovascular disease. If a physician will keep this in mind and take a Wassermann on all patients with cardiovascular symptoms, regardless of economic status of the patient, more correct diagnoses of syphilis of the cardiovascular system would be made.

Only by the most painstaking examination of the patient as a whole are the early signs of cardiovascular degeneration to be detected. Not only must the signs be recognized, but they must be correctly interpreted. The more one looks for cardiovascular syphilis in clinical material of any type, the more one finds. The better one knows the earlier and concomitant signs of syphilis as a disease, the more he can detect.

Age of Onset

The role of cardiovascular syphilis occurring at the time of mature achievement is evident and indicates, at the same moment, the costliness to the community and the danger of considering social or financial position in arriving at the diagnosis. Many a young man, without a foothold in the world when he acquires his primary lesion at 20, is a substantial member of the business or professional community when his vascular degeneration overtakes him. He is then, to his own detriment perhaps, too respectable in the eyes of his physician or his life insurance examiner to have syphilis seriously considered, or he has forgotten its obscure beginnings.

The onset of cardiovascular involvement is usually between 35 and 55 years, usually during the second or third decade of the syphilitic infection.

Uncomplicated Cardioaortic Syphilis

The cardiovascular system is quiescent in the presence of early spirochetal invasion. Usually for a period of years no evidences of changes appear, although there appears the slow development of non-symptomatic changes in the aorta. Relapsing serological test; faint, positive, or doubtful reactions and the fixed positive should direct attention to the possibility of the cardiovascular involvement during this quiescent stage.

The first warning of cardiovascular involvement may be sudden death. This occurs in a patient with syphilis but who has had no signs or symptoms of cardiovascular involvement. Autopsy in these cases shows spirochetes in the heart muscles.

The first signs of aortic disease usually show as abrupt onset of circulatory embarrassment in comparatively young persons—slight shortness of breath, slight cough and edema of the ankles. Occasional pain or dyspnea occurs in paroxysms. Dyspnea may be nocturnal.

Examination shows a change in the aortic 2nd sound, not merely accentuated as in hypertension. As at this time has a tympanic clang or a hollow metallic quality. Dilatation of the aorta occurs as shown by x-ray film, fluoroscope and increased retromanubrial dullness. There is a palpable and visible pulsation in the suprasternal notch in the absence of hypertension.

Later a rough systolic aortic murmur is heard, transmitted along the left sternal region to the xiphoid process. It may be heard at the apex. The best results from treatment are obtained at this time before complications occur. As the signs and symptoms are vague at this time, an added responsibility is placed upon the physician to make the diagnosis and begin treatment at this period when prognosis is so hopeful.

Uncomplicated syphilitic aortitis leads into one of three conditions—aortic regurgitation, coronary

*Presented to Seventh District (N. C.) meeting at Rutherfordton, November 28th

disease, or aneurysm.

The parting of the ways as between aortic regurgitation and aneurysm follows the aortic systolic murmur mentioned above. If the patient is to devolop aortic regurgitation a faint diastolic whiff is heard at A_2. The beginning development of an aneurysm is shown by the appearance of a thrill and diastolic shock.

The symptoms of aortic regurgitation, including the murmur, enlargement of the heart, heaving precordium, capillary and water-hammer pulse, and pistol-shot sound over the femoral area are too well known to be discussed here.

A high systolic and low diastolic pressure are characteristic of this condition. As the aortic valve is not functioning as it should, this decreases the pressure that is continuously applied to the wall of the aorta. This lessens the chances of development of an aneurysm of the wall of the aorta weakened by syphilis. If the aorta valve remains patent and functions properly, the pressure on the weakened wall of the aorta causes the development of the aneurysm.

In aneurysm the first sign that develops is found upon examinatinn to be a broadening and distortion of the area of dullness to the right of the sternum from the base of the heart upward. Later, there is difference in blood pressure in the two arms, with hoarseness, enlarging dullness, impaired breath sounds over area of dullness, thrill and diastolic shock. X-ray or fluoroscopic examination may show the aneurysm or a clouding from an associated mediastinitis.

Although coronary sclerosis is infrequent, a physician should be on the lookout for it. In 86 autopsies of patients with coronary sclerosis, 19% had syphilis.

The patient may have true anginal attacks or he may have attacks of pain similar to "pseudo" angina. This makes diagnosis of the syphilitic state difficult unless one uses the Wassermann test in these cases. Also, a search for signs and symptoms of aortitis may be of help.

Negative Wassermann Not to be Relied on

I wish to call again to your attention the fact that patients with a negative Wassermann may have syphilitic involvement of the aorta. In fact, in a group of patients, one may find, negative, doubtful or positive reactions. It is estimated by Moore that 10 to 15% of the patients will have a negative test. The provocative test does not give the results that were expected at one time. This may be accounted for by the increase in sensitivity of the tests, as it is used by the present-day laboratory. There is a definite danger in giving arsenicals to a patient without previous treatment, as done in the provocative test It may cause a bothersome skin reaction. More important, it may cause death from therapeutic shock. No case of syphilis of the cardiovascular system, except in early aortitis, should receive any of the arsenicals before being given a preparatory course of other drugs, as bismuth or mercury—preferably bismuth in an average case. The result of a series of blood tests over a period of a few weeks is almost as dependable as the provocative tests.

The therapeutic test in early aortic syphilis.—This can be used in a young person in which one finds the tambour second sound and the aortic murmur mentioned above. Treatment at this stage causes the rapid devolopment of symptoms and signs of late aortitis, as a systolic murmur develops over A_2 due to changes in the aortic valve. Apparently, the patient is worse off than before. This is not so, as these changes are due to a healing process and not to the infection. In a small percentage of these patients, treatment will cause a prompt and marked remission, or disappearance of all clinical symptoms and signs.

Treatment

Modern treatment of cardiovascular syphilis is based upon certain fundamentals. These fundamentals are accepted by the leading syphilologists and are the result of years of investigations, research and studies of many fatal treatment accidents.

The usual case of aortic involvement is seen as the result of untreated or under-treated syphilis. The well-treated case of syphilis only rarely develops cardiovascular involvement.

In early cardiac complications complete arrest is possible and in late complications careful treatment is worthwhile, as it increases comfort and effectiveness.

Treatment of these cases calls for careful consideration of each case. No routine treatment is safe. Prognosis is worse after the development of reactions to treatment. Reactions should be avoided at all costs.

Under the proper management and dosage the best results are obtained from the use of neoarsphenamine, although any of the arsphenamines is very toxic. Toxicity can be controlled by dosage. From a symptomatic standpoint, results are good as to relief of pain, dyspnea, etc., and life expectancy is increased in aneurysm and aortitis.

Reactions must be avoided, especially as to such severe reactions as therapeutic shock and therapeutic paradox or fast healing with the development of scar tissue to a point of decrease in the function of an organ. These can be avoided by proper examination, never giving any of the ar-

sphenamines at the onset, and when given, using a minimal dose of neoarsphenamine—.05 Gm. to 0.1 Gm. as the initial dose, and never more than .45 Gm. In decompensated or badly damaged hearts, mercury and iodides should be used for weeks before starting bismuth or neoarsphenamine.

In any case of syphilis with the cardiovascular involvement the heart should receive first consideration. Bed rest, digitalis etc. should be used as indicated, along with proper syphilitic treatment as it applies to the heart.

Decompensation should be especially guarded against, both before and after beginning syphilitic treatment. It reduces expectancy and restricts the possibility of treatment.

One should not permit a negative Wassermann to cause a decrease in number of treatments. Treatment should continue for several years in cardiovascular syphilitic patients.

Case Histories

Case 1—Colored woman, 30, admitted for treatment for syphilis, July 22nd, 1938. By Nov. 2nd, 1939, the patient had been given 17 doses of neoarsphenamine, 25 doses of bismuth and 6 doses of mapharsen—a total of 48 treatments. She complained of slight dyspnea at this time. She has increased retromanubrial dullness, A_2 is tympanic. This patient has an uncomplicated syphilitic aortitis. The cardiac condition should improve with careful treatment.

Case 2—Colored woman, 37. Has had a total of 83 treatments. Examination on Nov. 2nd, 1939, shows that A_2 is accentuated, no increase in retromanubrial dullness, b. p., 145/110, examination of eye grounds show sclerotic retinal arteries. Spinal test negative. This patient has no syphilitic involvement of the aorta. A_2 is accentuated but this occurs in hypertension. With consideration of the hypertension and eye grounds she has hypertensive cardiovascular disease.

Case 3—Colored man, 35, admitted with a diagnosis of syphilis and angina pectoris. Angina occurred two weeks before admission. Examination shows increased retromanubrial dullness. Tympanic A_2, dyspnea and edema of the ankles. Diagnosis: Syphilitic aortitis and coronary sclerosis. Patient was given 1 c. c. of bismuth for two successive weeks. He died during anginal attack 5 days after his last treatment.

One cannot be sure. Death may have been purely on an anginal basis. At least, this patient should not have had bismuth at the beginning of treatment. Death may have been due to therapeutic paradox. Mercury and iodides would have been better than bismuth in this case.

Summary

The best prevention of cardiovascular syphilis lies in the early detection and adequate treatment of syphilis before complications occur. In the early stages, diagnosis is especially hard, treatment especially good. This places responsibility upon the physician's diagnostic ability. Too much weight should not be placed upon a negative or doubtful Wassermann, either in treatment or diagnosis. Treatment for cardiovascular complications should continue longer than the 80-100 treatments needed for the early uncomplicated syphilis. It should continue for years, usually 3 or more.

The Specialist

(H. O. Ogilvie, in *Australian & New Zealand Jl. of Surg.*, Oct.)

Aristotle knew everything that was known in his day, but he was the last who could lay claim to such erudition. The painter cannot practice with success, as did Cellini, the arts of the sculptor and jeweler in addition to his own; but, being confined to brush and canvas, is he the better artist for painting nothing but landscapes?

The public insists on backing its fancy, and clamours for the specialist.

In surgery specialization is necessary when fresh problems appear, or old ones require further study: in disease so rare that only by segregation is it possible to study them in series and to view their causes or treatment as a whole: and in methods requiring the use of delicate or complex instruments, or a difficult technique alien to that employed in other regions.

Artificial departments create boundaries where none should exist, and crystallize what should be fluid. A subject so vast as surgery must have departments, but they should be arranged like those of a modern building, in which only the shell and floors are permanent and partitions and passages can be shifted to meet the needs of the time.

In the greater part of surgery the same methods and the same instruments are used. Pathology does not change greatly from organ to organ; hemorrhage is arrested in one way; technical advances in one branch are usually applicable to another. The greater number of operations in most parts of the body, once they have been perfected and standardized by pioneers, are performed as well, or better, by general surgeons, because they are better trained and have survived a fierce competition to gain the posts they hold. Tonsils are removed more neatly and bloodlessly by those who can tackle cleft palate and cancer of the tongue than by those brought up on tonsils and tonsils only. Operations on the kidney, particularly those difficult operations often demanded by malignant disease, are performed with greater technical precision by the surgeon versed in all abdominal operations than by him whose claim to the whole urinary tract is based on skill with one diagnostic instrument.

Specialization is at once the greatest hope and the greatest danger of surgery today. It can fulfil its mission only if each band of adventurers remains part of the main army of surgery, drawing its recruits from men fully educated and fully trained, bringing back its discoveries to be incorporated in the body of surgical knowledge and teaching, and receiving in turn help from the deeds of others, and courage from the advance of the whole front.

Can the Mosquito Transmit Syphilis?

(W. H. Kupper, Miami Beach, in *Jl. Fla. Med. Asso.*, Nov.

This idea presented itself to the author in 1937, in the course of a study at the Florida State Hospital in conjunction with the Rockefeller Foundation.

Twenty-five non-syphilitic psychotic patients were inoculated with malaria by means of infected mosquitoes All of the patients developed clinical malaria, and all were found to have positive Wassermann and Khan reactions by tests at 3 laboratories. *Two non-syphilitic patients who were negative clinically and microscopically for malaria were found to have developed positive serological reactions.*

Certainly this enigma calls for solution.

Subacute Bacterial Endocarditis*

Report of a Case

C. O. Jones, M. D., Cliffside, North Carolina

SUBACUTE bacterial endocarditis is a fatal disease. This widespread opinion is well illustrated by a review of 88 such cases at the Wisconsin General Hospital in which a solitary case was classified as healed. However, we must keep before us the fact that there are occasional mild infections capable even of spontaneous recovery.

Previous therapy of this disease may be dismissed with the sweeping statement that it has been ineffectual.

Practical considerations of treatment are as follows:

We all know the prime pathological feature is the formation of thrombi of organisms, fibrin and platelets on an injured area of endocardium. These affected areas are usually sites of congenital heart lesions or a previous rheumatic endocarditis. Of course, once formed, these vegetations tend to pile up larger and larger, spreading on the heart valves and chordae tendinae, and finally thrombi break off into the blood stream going to the lung, brain, kidney, liver or spleen.

To successfully treat such an infection two major aims must be realized:

First—To prevent further thrombus-formation so that the natural tendency toward organization of these fragile vegetations may not be interfered with.

Second—Sterilization of the blood stream.

Recently introduced therapeutic agents which promise hope for these two goals of treatment are:

1) Sulfapyridine
2) The anticoagulant substance heparin.

With sulfapyridine:

Witby of London, writing in *The Lancet*, November 1938, cited six cases showing definite clinical and bacteriologic improvement with sulfapyridine; extension of treatment, however, tended to minimize early promising results. Barnett of St. Louis, writing in the *J. A. M. A.*, February 1939, and also in a personal communication, described similar results. A report of a cure with sulfapyridine was given in the .....

The reported instances of success with sulfapyridine, followed in most instances by gradual return of symptoms, are explained on the basis that in this drug we do have an agent which is bacteriostatic and quite possible bactericidal. When this is introduced into the body, of the readily accessible organisms, out in the blood stream, are rather promptly killed or inhibited. This produces the objective and subjective improvement for periods varying from a few days to weeks or months, depending upon the mildness of the infection, number of foci etc. However, unless a true sterilization may occur, which is possible in mild and/ or early infections; after a period of time which may be said to be on the average 5 days the hidden organisms in the vegetations and foci not reached by the action of the sulfapyridine again multiply with gradual resumption of previous clinical signs. In addition to the effect of the hidden and protected organisms it seems as if the streptococci may actually develop an immunity to the action of the sulfapyridine and larger doses of the drug continue to be ineffectual.

Thus treatment with sulfapyridine alone may be summed up as encouraging and of benefit, but still not curative. Kelson and White report the administration of sulfapyridine in conjunction with heparin to six patients with subacute bacterial endocarditis.

With heparin:

The contents of a 10-c. c. vial of heparin (10,000 units) are added to 500 c. c. of physiologic solution of sodium chloride, and such a solution is given by uninterrupted intravenous drip day and night for 14 days.

The rate of flow (usually from 15 to 25 drops a minute) is carefully regulated to maintain, as

The rate of flow (usually from 15 to 25 drops well as possible, the venous clotting time (normally below 20 min.) at approximately one hour. Clotting time is measured before treatment twice, or more the first day and then at least daily, by the 5-tube method of Lee and White. Heparin is begun from 4 to 7 days after sulfapyridine has been started, when nausea and vomiting have subsided and before "escape" from its effects has occurred. From 4 to 6 Gm. of sulfapyridine (with desired blood levels of 5 mg. per 100 c. c. or more) is given daily by mouth before and during the use of heparin and for one week afterward—a total of about four weeks. Blood transfusions are given if there is anemia of 3,500,000 red blood cells or below. Persisting infections (including this one) predisposed to

*Presented to Seventh District (N. C.) meeting at Rutherfordton, November 28th

vitamin C deficiency, which interferes with fibrous repair; all patients, therefore, are saturated with 200 mg. of ascorbic acid by mouth four times a day for three days and continued on 100 mg. a day. Other added vitamins and iron are not essential to the therapy.

Two patients were too ill to allow treatment of more than two and three days, respectively, dying in two weeks or less. One patient was able to stand the heparin for only 1½ hours, because of a toxic lot of the drug. Three patients remaining were able to take heparin for more than a week, a length of time likely sufficient to produce a desired effect on thrombus formation. All showed striking improvement and have been free from evidences of the disease for 19 weeks, 18 weeks and 4 weeks, respectively, after discontinuing treatment. As a contrast, of 246 other follow-up control cases, an interval of five weeks afebrile was rare and only one boy had ever remained free for that time in this group of controls.

Here, then, although it is advanced only as a preliminary paper, are some very interesting and stimulating reports. However, this path of treatment is not without its many serious likelihoods. Because of the extension of the clotting time which occurs wih the introduction of the anticoagulant, heparin, a real danger of fatal hemorrhage becomes ever-present as is the nature of this disease, where thrombotic and embolic phenomena may strike without warning. The sudden entrance of an overwhelming number of organisms into the circulation, from liberation in large quantities due to vegetations disentegrating night prove fatal. Freidman, Hamburger and Katz reported one case treated with heparin and sulfapyridine for ten days which terminated fatally. Autopsy disclosed an intracerebral hemorrhage resulting from an area of encephalomacia in the frontal lobe that had probably resulted from a previous infected embolus. Although they feel that further use of heparin is indeed warranted they are quick to point out the bad results that may follow, such as may have occurred from the rupture of a blood vessel after embolization, with consequent intractable hemorrhage in their case.

Case Report

We are presenting a case of proved subacute bacterial endocarditis which has existed, to our knowledge, since January, 1939. The patient has a congenital heart lesion. In spite of transfusion, she was making no improvement when first given sulfapyridine; and, although she has had 5-7 days afebrile course, bearing out the results of others, her temperature gradually climbs back to 100-101. We have tried giving sulfapyridine in courses as suggested by Whitby, alternating it with sulfanilamide, and this has seemed to yield the best results. She has been given sulfapyridine 1.0 Gm. for 3 doses, then 0.5 Gm. every 4 hrs., in courses of one to three weeks. A morbilliform reaction appeared once, disappearing quite promptly with cessation of sulfapyridine. Another result which seemed to have no permanent ill effect was hypothermia of 94.0 which occurred on several occasions when a course of sulfapyridine was instituted. The drug was temporarily discontinued and external heat applied, and no discomfort of any proportion occurred. We wondered at the time if possibly more excellent results would not have been obtained if we had maintained the dosage and disregarded the low temperature. Possibly we could have inflicted the desired overwhelming, knock-out blow to the infection, but as this was in the early period of sulfapyridine we were proceeding rather cautiously.

This patient gained 12 pounds and, clinically, is in much better condition than when first visited 10 months ago. Sulfapyridine has definitely bettered her condition, but has failed to control the infection. She has had several rather bad embolic phenomena, one embolus lodging in the left lung, as shown by x-ray picture, and followed by a pneumonitis. At the time of the embolism the patient was already under sulfapyridine medication, but this failed to keep her temperature in check. Two small transfusions two days apart, plus continuance of sulfapyridine, brought a temperature drop to 99.0-100.0 in three days and in a week the patient felt as well as ever, although bothered by a persistent productive cough.

As regards heparin therapy in her case, we feel that it is certainly in order. Although she has improved under sulfapyridine, her outlook is still quite gloomy and we feel that any measures giving much promise of success are justified.

From the financial side of the proposed treatment, it is estimated that the heparin will cost around 7-8 dollars a day and recommended length of treatment is 14 days, so the heparin alone will come to 100 dollars—a meager sum if the results are life-giving.

Pollen Hayfever stops when there is no more of the pollen in the air and this is usually two weeks in advance of frost.—*J. R. Porter, M. D.*, Rockford, Ill., in *Modern Medicine*.

Bromide Blood Concentration has no effect on nutrition or b. m. r.—*Arieff*.

Two beds in one semi-private room. Two cases of oval lesions on the lower and inner quadrant of the right breast, and small lesions on other parts of the body. One was a case of hysterical dermatitis; the other scratched herself because the first one did.—*Roche Review*.

CASE REPORTS

Polydactylism

Charles Bunch, M. D., Charlotte, N. C.

Supernumerary digits on either the hands or feet is not a very rare condition, as attested by the numerous cases reported in the literature of Biology in general, Medicine in particular. A heredity factor is discoverable, almost without exception, although there is a lack of family records in a great many cases[1].

Syndactylism, webbed fingers or toes, is also a hereditary condition. It may or may not occur in connection with polydactylism[2]. Both conditions are believed to be a dominant trait[3] in some cases, a recessive in others[4].

Polydactylism is found in nearly every country and race. It is no more prevalent in males than in females[5]. It is more frequently seen on the upper extemity than on the lower. The supernumerary digits are usually marginal, undeveloped and most often lacking to some extent in bone or structure.

Usually there is but one extra finger or toe, but a far greater number have been reported. There is one reported case with thirteen fingers on each hand and twelve toes on each foot[4]. All sorts of combinations have been seen, but these great numbers are rare. One upper extremity may be affected, sometimes both — small marginal underdeveloped digits being present[5]. We very much less often see both rudimentary fingers and toes—that is, involvement of both upper and both lower extremities in the process.

Five generations of polydactylism was reported by McClintic. One of the most interesting reports on this subject was one regarding the population of a small village near Madrid, Spain. Here nearly all of the inhabitants—about150 in number—were affected by polydactylism, the result of intermarrying. Some of these people had 7 fingers on a hand, perfectly constructed and separate. The extra fingers did not interfere with their work, and they were, it is reported, quite proud of their extra fingers and toes. One person is said to have had 26 fingers and toes (14 fingers and 12 toes), and the sister of this Spaniard had 22 digits. Polydactylism went back for generations according to the statements of the oldest inhabitants of this Spanish town.

It is the desire for cosmetic improvement that usually brings the individual to the surgeon, but sometimes it is the resulting inconvenience of getting proper shoes that cause the patient to seek surgery. This latter motive was operative in the case that I now report.

This case was distinguished by the presence of an extra finger on each hand and an extra toe on each foot.

The patient, a 10-year-old colored boy, the third child of his parents, was well developed for his age, and his only complaints were relevant to his feet—difficulty in getting shoes to fit, painful walking, blistered feet at times. Examination revealed a marginal supernumerary finger on each hand, about half the size of the little finger, and containing two small phalangeal bones connected with a phalangeal joint. They were rather firmly attached at the margin of the hand, but they could not be moved at will. The toes were also marginally placed, about two-thirds the size of the 5th toe, the two bones and intervening joint were larger and better developed. They were more firmly and wider attached. No voluntary independent movement of the supernumerary digits was possible.

This child's parents had seven children living and well. One child had died in infancy. One miscarriage (cause unknown). There was no definite history of syphilis in family (patient was Kahn negative). The 4th child had had one supernumerary finger which had been removed. Neither parent had polydactylism. Paternal aunt had supernumerary fingers; no other polydactylism was known in the family.

The child's birth history and infant history was not remarkable.

The supernumerary fingers and toes were amputated and the convalescence was uneventful.

It is very uncommon that we see both supernumerary fingers and supernumerary toes on the same patient.

I am grateful to Dr. E. H. Hand for referring me this patient.

References

1. McClintic, B. S.: *Jour. of Heredity*, 1935, Vol. 26, No. 4, "Five Generations of Polydactylism" Pages 141-144.
2. Hurlin, R. G.: *Jour. of Heredity*, 1920, 11, "A case of Inherited Syndactylism in Man" Pages 334-335.
3. Murphy, D. P.: *Jour. A. M. A.*, 1925, 84, Pages 576-577.
4. Brandeis, J. W.: *Jour. A. M. A.*, 64, Pages 1640-1642.
5. Turner, H. E.: *Amer. Jour. Surg.* 1937, Vol. XXXVI, Page 385.
6. De Linares, L. G.: *Jour. A. M. A.*, 1930, (Foreign letters), Vol 94, No. 26, Pages 2080-2081.

Pernicious Anemia.—Free HCl in the gastric contents after the injection of histamin is practically proof that the patient does not have pernicious anemia.

Anxiety concerning heart disease may make an invalid out of an otherwise normal person—*E. F. Horine*, in *Jr. Indiana Med Asso.*

Joe

W. T. Parrott, M. D., Kinston, N. C.

Joe was a big, red, Irish Setter. He was of royal mien and manner, with magnificent poise. From the earliest days of puppyhood, his glistening seal coat, form and figure made him the choice pup of the litter.

His owner, Captain George, knew too much of the Law of Variabilities to choose on looks alone. He would drag beef around the yard and hide a quail in the rank vegetation of the morass to see which pup trailed best before he made his choice, because Captain George wanted above all things a pup with a good nose. Joe was a leader because he had the most wonderful, an almost uncanny, sense of smell. His long line of ancestors went back 200 years in the Irish Lagoons and many were the trophies that Joe's forebears brought home.

I got to know Joe when he was two-thirds grown, at a prison camp where I did the medical work. He loved raw beef as much as he did birds. Joe, blindfolded, could easily trail ¼ dram of beef (by actual measurement) 80 yards distant. When the barometer was low, he might go up to 85 yards; and when I added to this the help of a vasoconstrictor, as ephedrine, Joe would do 5 yards better. I wondered if Joe's olfactory powers were not susceptible of training for diagnostic purposes. They were.

Since the days of Hippocrates, of the older Hindu masters, even, medical literature has been replete with references to characteristic body odors in disease. No one but a tyro could mistake the odor given off in a case of smallpox for any other condition, and any experienced diagnostician will tell you that; and whose nose, once having perceived it, is so poor as not to recall a peculiar, characteristic odor in yellow fever? Down in the old Latin Quarter of New Orleans, up to a few short years ago, traces and odors of Yellow Jack could still be noted on the walls where the black vomit had left its mark.

Joe's sense of smell was a thousand times more acute than the best human olfactory system I have ever tested. In a long series of experiments, I had proved to myself that there was no difference between the Nordic, and the Alpine and the African nose, that is, as to keenness of smell; the shape, contour or size of the nose had nothing whatsoever to do with the acuteness with which it detected odors. One race had no margin over another. The tests, while revealing some remarkable things, had shown conclusively that the function of olfaction depended largely on the inherent somatic development, and the sorriest looking cur with a poorly developed nasal contour might easily have the best smelling sense in the entire litter. Joe proved his superiority with his nose.

At the prison camp nearly one-third of our patients proved syphilitic. Blood tests and physical examinations were laborious and required time. Why not train Joe to help me find them? I did. Relying on what I found to be an inherent faculty, and developed powers of association and especially recessive association, I began to pay *known* syphilitics to coddle Joe and occasionally feed him beef. Joe began to show a preference for syphilitics at the camp. He liked their company and as soon as I noted Joe was searching out syphilitics, I knew Joe had *Knowledge*. This knowledge was proved when I began to suspect syphilis in newcomers, if Joe courted them. He showed a great fondness for Mr. G. Mr. G had had two blood tests, both negative. Yet, after a few weeks, Mr. G. developed unmistakable signs of syphilis, including syphilides, throat ulcer and weight loss. By the therapeutic test, Mr. G. had syphilis which rapidly improved under mercury and bismuth.

Just as I was about to conclude that Joe was a more accurate diagnostician than the laboratory and could more accurately find syphilis than I could, the poor fellow died and like Thomas Gray's flower, he was born to blush unseen. I shall always believe that Joe quite narrowly missed becoming famous.

The Modern Treatment of Scabies

(D. V. Currey, *Canadian Public Health Jl.*)

Equal parts of soft soap (the author uses an anhydrous 20% soap which will not separate from the other ingredients) isopropyl alcohol, and benzyl benzoate. Treatment can be ambulatory, it is inexpensive and will not irritate the already scratched skin. No case of dermatitis followed this new treatment.

The patient first receives a warm bath for 10 minutes during which he rubs himself thoroughly with soft soap and pays special attention to the affected parts. Then while wet the body is brushed all over with the solution for five minutes from the neck downwards using an ordinary firm bristle paint brush. Special attention is paid to the parts of the body affected. The lotion is allowed to dry, then the painting is continued for a further five minutes. The body is gently dried with a towel, and the patient puts on the clothing worn before the treatment was started and also uses the same bed clothing that night. Twenty-four hours later a cleansing bath is taken, clean clothes are put on and the bed linen changed. The underclothing and soiled bed linen are boiled. All other bed clothing is hung outside in the open air, or if woolen underwear has been worn a hot iron is run over this, special attention being paid to the seams.

All other children in the family are also painted regardless of whether or not they show any signs of the itch. The parents are advised to take the treatment.

DEPARTMENTS

HUMAN BEHAVIOR

James K. Hall, M.D., *Editor,* Richmond, Va.

Elbert Lee Trinkle

The death in Richmond on the twenty-fifth of November of former Governor Trinkle has deprived the Commonwealth of a characterful and experienced and useful civic asset. He died in his room in a hotel in Richmond, where he had come from his home in Roanoke to attend a meeting—perhaps the annual meeting—of the State Board of Education, of which he had been chairman for several years. He had presided over the deliberations of the Association and, on the afternoon before his death, had participated in a reception tendered the membership of the Association by Governor Price and His Lady at the Mansion. At the bed-time hour on the night before his death he was apparently in comfortable health. But at eight o'clock the next morning he was dead. Late in the night he had complained of the fateful anginoid intrathoracic discomfort that so often precedes the unexpected and sudden translation of a man apparently in vigorous health.

Governor Trinkle was a large, ruddy, powerful-looking example of somatic soundness and vigor. He was only 63 years old when the final blow fell, and there should have been many more years of life for him. He was a native of Wytheville, an old town of that region spoken of as Southwest Virginia. Climate and soil there lend their help in producing rugged and forceful citizens who take seriously their political and other civic duties. Governor Trinkle had taken himself through college and had fitted himself for the practice of law while he was still a youngster. But afterwards he took life seriously and he doubtless drove himself year after year more unrelentingly than he realized. He was from the first a busy and a successful lawyer, an active business man, a civic asset to his community, and a churchman who guided himself in his daily life by his religious convictions.

He served for ten or twelve years in the Senate of Virginia prior to his election to the governorship in 1922, by the largest number of votes ever cast for Governor of Virginia. He belonged to the old school of oratory and his appeals to his fellow-citizens, whether as jurors or voters, were powerfully effective. It is doubtful if any citizen of the Commonwealth could have for the last fifteen or twenty years dared to meet him in joint discussion on the hustings.

Though I have little interest in partisan politics I have long had devoted and appreciated friendships amongst partisan politicians. Their characters and personalities probably constitute the best mensurator by which to estimate a community's character and aspirations. The successful persistent contender for elective office must be able to reach the hearts of his constituents, and he must be both able and willing either to adjust himself by compromise to their demands or to lift them up to his conceptions and aspirations. Such a politician, and I use the word in its best meaning, constitutes a good brief volume in which one can learn much of one's fellow-mortal. Most of them I like, most of them I respect, some of them I admire, and all of them I look upon as symbolic of the quality of the yeomanry to which they make appeal. We would all do well to engage ourselves in efforts to develop an understanding of our so-called politicians rather than to condemn them as unmitigated and unpatriotic buccaneers. Most of those whom I think I know well impress me as being the equal in character of at least myself. And most of them may not be pleased by such doubtful appraisement.

I think I knew well Elbert Lee Trinkle. During his governorship I had to have access to him from time to time both on account of my membership on the State Hospital Board and on the Governor's Board of Criminal Mental Hygiene. The latter Board, composed finally wholly of physicians, dealt with the prisoners in the state penitentiary. It was our duty to examine the prisoners from a nervous and mental viewpoint, and to try to be helpful to the prison administration in dealing with prisoners in the penitentiary, at the State Farm, and in the road camps. The Governor referred to the Board all appeals by prisoners for changes in their sentences. Often we were called upon to examine prisoners awaiting execution. All of our work was interesting, much of it was difficult, some of it was tragic. So far as I know the Governor adopted the suggestion of the Board, whenever advice was asked by him. Whenever we had to report that the prisoner sentenced to death appeared to us to be not insane we knew what such a report meant. My work on that Board gave me tutelage in the awful responsibility placed upon the Governor by the pardoning power. Life and death are placed in his hands. But such responsibility should be upon one rather than be diluted by being placed upon a group. He who lives life must fit himself for dealing with responsibilities. Once, when I felt that the prisoner who was going to the electric chair at seven the next morning might not be guilty of the crime charged against him, I called Governor Trinkle after midnight be-

cause I had been out of the city. I apologized to him, of course, for arousing him to talk to him at such an unreasonable hour about such a distressing problem. He thanked me for calling him, and he insisted that I come to his office that we might go over all the data in the case. He proposed to have the execution deferred until we could review together the information upon which he had been obliged to act. When he told me of all that he had done and had caused to be done in an effort to become able to commute the sentence of death to imprisonment for life I realized how he had laboured and suffered—and how he would not allow his emotions to obstruct the law in its majestic and dreadful work. Once he called me to his office to ask me, laughingly, if I would underwrite his pardon of a young fellow-citizen of my native state. He pardoned the youngster and talked to him as tenderly as if he had been his own son. Afterwards the Governor told me that the boy would write to him from time to time from North Carolina that he was walking straight.

Whenever it was possible for Governor Trinkle to attend the meetings of the State Hospital Board he met wih us. And he made the rounds through the wards and lent sympathetic ear to all patients who had complaints to lodge or demands to make. And if the Superintendent of the Hospital arranged a dance for the patients and visitors Governor Trinkle always danced, as the rest of us did, with some of the women patients. I doubt not that many a woman patient wrote to her children that she had danced the night before with the Governor; and Mrs. Trinkle would dance, too, with some of the men patients. The Governor's sympathies were with those upon whom misfortune had fallen, and with the obscure and the friendless. He had a large heart and a kindly soul. Only a few days before his death he wrote to me in expression of his prayerful hope that I might be able to be helpful to one of his sick friends.

Governor Trinkle was unfailingly helpful to those of us who had to do with the unfortunates in prison and with those who were sick in mind and often in soul in the state hospitals. During the years of my association with him in dealing with those problems he never spoke to me of partisan politics nor did he ever make even a political request of me. I have pronounced him a good citizen, an efficient and faithful public official, and a courteous, kindly, genial man who loved his fellow-mortal and who experienced joy only when engaged in doing good things for mankind. Virginia is bereft by his death.

GENERAL PRACTICE

WALTER J. LACKEY, M. D., *Editor*, Fallston, N. C.

TREATMENT OF WOUNDS

IT is an everyday occurrence for the general practitioner to treat some type of wounds. The treatment varies according to type, severity and location. Wounds around the face and severe enough to cause disfigurement should be referred to the plastic surgeon. Some extensive wounds should be referred to the general surgeon. However, the majority of wounds are and should be treated by the general medical man.

The first principle of the treatment of wounds is to cause least trauma. The wound should be cleansed thoroughly and one of the best methods is to use plenty of water, and soap if necessary. This is inexpensive and is as good or better than using expensive antiseptics, and water does no damage to the tissues. Any type of pressure syringe will aid in cleansing the wound of foreign material, and not damage the tissues, as scrubbing or forceful cleansing of the parts does. Time should be taken to remove all the debris and foreign matter, for if this is not done healing may be slow and infection is likely. Dakin solution, hydrogen peroxide, S. T. 37, aqueous solution of merthiolate and many other antiseptics may be applied after the wound is cleansed. However, strong antiseptics, such as tincture of iodine, should not be applied to extensive wounds. A solution strong enough to kill bacteria is probably strong enough to kill tissue cells. The physician's job is to cleanse the wound, properly suture it if necessary and then trust in the Lord to do the rest. Sutures should not be placed too close together, nor drawn too tight. If the skin is overlapped or not drawn straight an ugly scar will result. It is not pleasing to have a patient come in to see you late with a bad scar when if more care had been taken the bad scar could have been prevented.

Catgut has been popular for a long time but it losing its popularity lately. Silk is being used more and more every day. Silk will hold the tissues in place better and longer and there is less danger of stitch abscesses and usually less scaring—of particular importance in wounds of the face.

Another essential in treating wounds is proper rest of the tissues. Dr. Douglass in a paper on the Treatment of Wounds at the Southern Medical Association meeting in Oklahoma City stated that if we wound give as much attention to the proper rest of the tissues as we do a fractured bone much better results would be obtained.

The wound should not be closed too tightly, and in many cases drains are advisable. Other cases are better left wide open. If a wound is doing nicely frequent dressings are of no benefit and may delay healing.

In puncture and extensive wounds, especially those suffered around the barn yard, it is usually better to give a prophylactic dose of tetanus antitoxin, and in some cases gas infection antitoxin, (*B. Welchi.*) The patient should be tested for sensitivity to the serum and then kept under observation for 30 minutes or an hour in order to guard against sudden death from anaphylactic shock.

SURGERY

Geo. H. Bunch, M. D., *Editor,* Columbia, S. C.

Atrophy of the Testicle Following Operative Repair of Inguinal Hernia

In the operative repair of inguinal hernia the surgeon's chief concern is to cure the hernia and to prevent recurrence. Statistics on operative results are based on the mortality rate and on the precentage of recurrences. However, impairment of the testicle following repair, although fortunately rare, is always a potential danger in every operation for inguinal hernia. This is obviously true for it may be the result of direct trauma to the testicle itself; it may come from disturbance of its blood supply, from nerve injury or from infection after operation.

Painful testicle may be caused by irritation of the nerve from its constriction by scar but is more apt to be due to impingement of the gland against the pubic bone and the closed external ring from the upward tug upon it by the spermatic cord which has been made unduly short by transplantation. Many cords are short even before operation. Before closing the incision the surgeon should be sure that the testicle may be placed without tug in the bottom of the scrotum, although this may have required lengthening of the cord as in the operation for undescended testicle.

Atrophy of the testicle, on the other hand, is usually the result of impaired blood supply to the gland or of infection. Of these the first is the more important although epididymoörchitis as a cause of atrophy has been stressed by Ewell. (*Jour. A. M. A.*, Sept. 16th, 1939).

Arising from the abdominal aorta the spermatic artery automatically lengthens, as do the vas deferens and the spermatic veins, to permit the prenatal migration of the testicle from the abdomen through the inguinal canal into the scrotum. It remains throughout its course a terminal artery without anastomosis, so that in case of injury to it the testicle atrophies from the lack of collateral circulation.

One operating upon many inguinal hernias cannot escape the conclusion that the spermatic veins enjoy a high degree of relative resistance to thrombosis; otherwise most patients would develop thrombosis from the trauma of the tedious dissection which is a necessary part of the radical cure. The relationship of the cord to the sac may be so intimate, the adhesions so dense, the detailed anatomy so obscured, the dissection so difficult, that trauma to the cord, more or less severe, is inevitable. When thrombosis occurs it usually remains localized but in some cases becomes general so that the return circulation from the testicle is impaired.

In infants and in young boys the tissues are so delicate and the anatomy so diminutive that it has been suggested that normal salt solution be injected by hypodermic needle into the tissue spaces to facilitate dissection.

After dissection has been completed, the closure of hernia is not without danger to the vessels of the cord. In lapping the external oblique fascia over the cord two rows of interrupted linen sutures are taken, any one of which may penetrate a vein and cause thrombosis or hemorrhage. Judgment is required to determine the proper degree of closure of the external ring. If closure is too loose there will be recurrence of the hernia; if too tight there will be constriction of the cord and atrophy of the testicle. Even though the cord be not constricted at the time of operation, from edema of the tissues or from hemorrhage in the cord there may later be constriction.

Even though there may not be suppuration, a final hazard to the blood supply of the testicle is thrombophlebitis of the vessels of the cord from wound infection.

In conclusion, Wilhelm (*Int. Surgical Digest,* Aug. 1939) in a series of 313 cases of herniotomy in children reported twelve cases of postoperative testicular atrophy.

INTERNAL MEDICINE

George R. Wilkinson, M. D., *Editor,* Greenville, S. C.

Painless Jaundice

When a patient in the sixties presents himself for an examination, claiming excellent health except for jaundice, the physician would normally be inclined to view the situation with gravity. After exhausting all of the means at his disposal, finding the gastric content to contain an abundance of free hydrochloric acid, the gallbladder to cast a clear-cut shadow which disappears with the fat meal,

the stomach pictures to be clear in outline and the stools to contain a normal amount of bile, one would still not be satisfied that there might not be something of a serious character behind he clinical picture so described.

Recently, such a patient duly presented himself to the writer for examination. Shortly afterward, he changed his place of abode to another city and was referred to a professor of medicine in one of the best medical centers. The work was all repeated and the laboratory findings were all the same. The second physician was about to make the same error that the first physician had made, when the laboratory reported that the yellow pigment found in the blood plasma was not endogenous in origin, but was carotene. Whereupon, with further questioning, it was found that the patient had been in the habit of eating raw carrots morning, noon and night, being of the opinion that carrots contain some certain important ingredient which wards off disease.

This is the first instance of the writer seeing a patient who has eaten so many carrots that the skin has actually become carrot-like in color. So, painless jaundice, with all its dire implications, may in certain instances prove to be nothing worse than carotinemia.

TUBERCULOSIS

J. Donnelly, M. D., *Editor,* Charlotte, N. C.

Tuberculosis Among Servants

Primary tuberculous infection in children is invariably produced by transmission from an infected adult. The source of infection may be a diseased parent, some other adult member of the family, nurses, maids, or other domestic servants. In my own records of the tuberculin skin-testing of school children, less than 50 per cent of the positive reactors give a history of known contact with an active case of the disease. It is true that many cases of adult disease remain unrecognized as such for years, having been in the meantime a continuous danger to other members of their families. Asthma, stomach trouble and chronic bronchitis, or "bronchial trouble," are frequent previous diagnoses in cases eventually proven to be chronic tuberculosis. Any cough lasting longer than six weeks, regardless of the age of the patient, should be thoroughly investigated.

The possibility of the transmission of infection from diseased servants in the household to members of the employers' families, particularly children, is of the greatest importance. The Negro race furnishes nearly all of the house-servants to southern families. Statistics show that among Negroes the death rate from tuberculosis and the percentage of infection as indicated by the tuberculin skin-test is three to four times that among whites in the Southern States. Many tuberculous infections in white children whose families are apparently free from the disease could have been and probably were contracted by association with tuberculous servants.

The danger of transmission of infection connected with the servant problem is illustrated by the following analysis of the records of 245 active tuberculous cases in Negroes diagnosed in the Charlotte Tuberculosis Clinic in the past few years. Of these, 130 were males and 115 females. 72.3% of the males and 69.5% of the females were between the ages of 20 and 40 years, the most productive working years of life and the age period of most of our servants. The percentage of patients below 20 years of age (25.4%) was 11% higher among females than among males. As a rule these younger girls are chosen as nursemaids, many of them being already diseased and a continuous source of infection to the white children under their care. As to the stage of the disease in this series 65.5% of the males and 75.6% of the females were either moderately or far-advanced, the majority of them being open cases with germ-laden sputum. It should also be noted here that the occupation of "cook" led the list in the number of patients engaged in each particular line of work.

Some months ago a Negro woman cook was sent up for an examination. Her white employer stated that the woman had been cooking for her for about one year and was a reliable servant, but that she had had a pulmonary hemorrhage two days previously. Examination indicated that this woman had a well advanced tuberculosis with cavitation and a sputum positive for tubercle bacilli. There were three children below the age of ten years in this household. Another housewife with two small children decided to take an automobile trip of several weeks duration and was in need of a nursemaid to assist her in the care of the children. She obtained one, a seventeen-year-old Negro girl. This girl had previously been examined at the City Clinic, and found to have a fairly well-advanced tuberculosis with a sputum positive for tubercle bacilli. She refused to accept an offer of care and treatment. Such instances as these occur frequently, and serve to emphasize not only the danger of carelessness in the selection of servants, but also the necessity for the requirement by the householder of a health certificate certifying that the applicant for such a position is free from tuberculosis and syphilis. The State of North Carolina has gone part of the way in the passage of a law requiring all public food handlers to obtain such

health certificates, but the private family has no such protection. Consequently housewives must realize the danger, and protect themselves and families accordingly.

In spite of the fact that there are not now and probably will not be in the near future enough sanatorium beds to care for the infected Negroes throughout the Southern States, in some sections at least there is indication of gradual improvement in the conditions. For example, in this country in 1930 there were 26 deaths from tuberculosis among the whites and 75 among Negroes; in 1938 there were 26 whites and 45 Negro deaths. In the eight years there was a reduction of 30 deaths among Negroes, while the number among whites remained the same. The greater number of these deaths occur among patients between the ages of 20 and 45 years, the working period of life. National statistics show that the death rate from tuberculosis in the last 25 to 30 years has dropped from first place to seventh in the list of causes of death at all ages, but the disease still occupies first place in the list in the age period of 20 to 40 years. In the previously mentioned series of 245 infectious cases there were 7 men, but only one woman above the age of 50 years. One man was above 60 years, but there were no women above that age, an indication of the possibility that the more susceptible individuals of both sexes had previously been eliminated.

There is no doubt that active disease among servants remains a distinct hazard to the families of their white employers. The practically complete elimination of this hazard is in the hands of these employers, and they should be mindful of this ever present danger. The family physician can and should play an important part in this work as it is within his province to use every effort to preserve the health of the families in his charge. Furthermore, health departments are always willing to render the service, and in fact are continuously urging more careful attention to this important work. Unquestionably, the incidence of tuberculous infection will be greatly reduced if more widespread consideration is given to health conditions among servants. Prevention of the transmission of infection will be greatly reduced if more wide- tuberculosis problem.

HOSPITALS

R. B. Davis, M. D., *Editor*, Greensboro, N. C.

Where Does the Responsibility Lie?

Is your hospital responsible for the conduct of the staff? This is a question which has not been fully settled to the satisfaction of the American public.

Managing boards of hospitals stand in a peculiar place in a community. They are charged with an important duty. No one should accept a position on a governing board who cannot see the value of health over wealth, and who is not willing to take a firm hand on the side of right regardless of the injury to someone's personal feelings. It has often been said that a physician is not qualified to serve on the governing board of a hospital because he is too apt to show partiality or use the position for personal gain. Partiality is a very human failing; however, it is doubtful whether physicians are any more prone to show partiality than any other group of individuals.

The second accusation, in the majority of cases, is not justified. The consensus is that a physician is a very unselfish individual. It is admitted that he gives away more of his time, labor and money than a member of any other profession in the world. Therefore, it is not just to say that he is selfish because he is on a governing board of a hospital. The fact is that a physician who is on the governing board of a hospital gives a great deal more of his time and money to the operation of that institution than anyone else on the board. Almost invariably he recommends and insists upon a patient paying his hospital bill before he pays his doctor's bill. Is this true of the merchant, the lawyer, the banker or the preacher on the board?

Many hospital governing boards are guilty of lax discipline and the appearance of indifference as to the character of work done by their staffs. I will cite several concrete examples.

A certain hospital with which I am familiar has a Board of Trustees who have never so much as asked a question as to how the doctors are writing their histories, whether they have adequate laboratory work done before making a diagnosis, what percentage of the diagnoses of each member of the staff is correct upon the findings of the pathologist, or what the mortality rate of any of the members of its staff is? The writer is of the opinion that they do not even know that such information should be a part of their knowledge. On the other hand, they all know and speak up promptly when it comes to the number of pay patients a certain staff member brings to the hospital. I mean to say that they know to ask that question if a certain staff member's resignation is being considered.

Another very large hospital whose operations I know about has seen fit to appoint men to its medical staff because of their financial and social standing rather than their scientific and service experience. This of course is done with an idea of keeping the hospital in good financial condition, but it is a very poor way to do so.

Members of a hospital who are not willing to

conform to the by-laws should not be expected to be retained in their positions, nor should they be shielded when the matter is discussed. Hospital boards are entirely too negligent in this matter. The lay public expects and should demand that each member of each hospital governing board of their community familiarize himself with the intricate workings of the hospital, and the most important part is the knowledge of the conduct of the professional staff.

In contrast to the minor profit made each month there is no fair comparison to be drawn. Only recently a trustee of a certain hospital called for a special meeting and busied himself considerably studying the economics of the hospital; yet that same trustee did not trouble himself to find out the condition of the records of the men on the medical staff. Neither did he ask whether or not the hospital was approved by the American College of Surgeons and the American Medical Association. His interest did not center around the number of operations or deaths the hospital had the previous month. He did not ask whether or not any member of the staff was operating on a large number of normal appendices. He was not vitally concerned with the general welfare of the patients.

It is because of these above mentioned facts that this article is written. I wish that every physician reading this article would give it to at least one member of the governing board of his hospital and ask him to read it. The lay public should have no reason to expect that they are being sold into the hands of incompetent physicians and yet this may be the case where the trustees do not fulfil their whole duty to the hospital and to the community.

PEDIATRICS

G. W. Kutscher, Jr., M.D., F.A.A.P., *Editor*
Asheville, N. C.

Academy of Pediatrics Meeting

The annual meeting of the American Academy of Pediatrics was held in Cincinnati, Novembe: 16th-18th. Some of the ideas presented are briefly outlined here.

From the Symposium of Sulfanilamade and Sulfapyridine—The mode of action of these two drugs is still unknown; sulfanilamide seems to work best when feveh is present; the nature of the cyanosis resulting from the use of these two drugs, beyond that it is usually a methemoglobinemia and rarely a sulfhemoglobinemia, is still unknown. Methe moglobinemia responds quickly to the intravenous use of methylene blue intravenously in doses of 3 mgm. per kilo body weight, or in 2-grain doses by mouth; but this drug is of no value in sulfhemoglobinemia.

The choice of one drug rather than the other, the amide or pyridine forms, is as follows: In beta hemolytic streptococcus infections, the pyride is as valuable as the amide form; but the latter is used by preference because it causes less vomiting. In urinary-tract disease the amide form is preferred because it is eliminated chiefly through the urinary tract. In spinal-canal disease the concentration in the spinal fluid is greater than in the blood when the amide form is prescribed, also the amide form is easier to give by hypodermic. In streptococcus viridans infections the preference goes to sulfapyridine as sulfanilamide is valueless in this type of infection. In meningococcus meningitis the amide form is preferred due to its superior diffusion, although both forms of drug are valuable. If no results follow the use of the drugs within 36 to 48 hours then use specific serum. In pneumococcic empyema use the pyridine form plus drainage over a long period of time. When in doubt as to the cause of the disease use sulfaypridine, since it is effective in a greater number of organisms than is sulfanilamide. Change to the amide form later when the diagnosis indicates use of the amide. In staphylococcus infections the drug of choice is the pyridine form, except in urinary-tract infections.

The section on Communicable Disease Prevention supplied the following notes. This editor reported on the control of mumps in a summer camp by the use of 8 to 10 c. c. of convalescent mumps serum. Only one failure to completely prevent mumps in 51 susceptible and exposed boys was the resut of this study. Poliomyelitis: None of the speakers held out any hope in the way of either prophylaxis or therapy from the use of poliomyelitis convalescent serum. One worker believes it might be of value in large doses (500 c. c. or more). Several speakers commented on their experience with two or more cases of this disease in the same family at the same time during the past summer.

Considerable discussion centered about the value of the various diphtheria immunization agents. It was finally decided that two doses of diphtheria alum-precipitated toxoid, spaced a month apart was best. The Schick test should be done six months later. A negative Schick test does not indicate permanent immunity; it should be repeated every one or two years. The Schick test is still the most practical and valuable test of diphtheria immunity. It of itself confers a degree of immunity. One speaker told of giving 5 weekly Schick tests to a group of medical students who had been Schick positive and thereby producing in them a

Schick negative test. How long this acquired immunity will last is yet to be determined.

The use of sulfanilamide and sulfapyridine in the treatment of measles was frowned upon, even though the idea is to use the drugs as prophylactic agents to avoid measles complications. Treat the complications preferably when they develop, by sulfapyridine. In scarlet fever the drug is valueless except to prevent some of the complications; in this disease it can be used as soon as the diagnosis is made. The advantages of immune measles globulin was supported.

After January first a new form of scarlet fever prophylaxis will be available. It is a broth-free preparation devised to further reduce the reactions which have been responsible for the refusal of many physicians to use the prophylactic scarlet fever toxoid. It is still doubted that reactions will be entirely eliminated. The chief use for scarlet fever prophylaxis is to keep nurses from contracting the disease while on duty on contagious disease wards. Therapeutically the newer forms of scarlet fever serum made by Lederle and Parke Davis seem to be far less likely to cause serum reactions, and the clinical response to the inoculation is quite remarkable.

The consensus regarding the use of both hypodermic and oral use of cold vaccines was that they were valueless, except in those individuals who are allergic to certain bacteria. Then an autogenous vaccine should be used and not a stock preparation.

A decided shift toward the less frequent use of tetanus antiserum prophylactically for ordinary cuts, scratches and even deep wounds was made quite clear. The medico-legal problem is the reason so much of the serum is today being used. One speaker told of a series of 5,000 machine shop wounded employees who had not been given antitetanus serum and not a single case of tetanus developed. Can't you hear the opposing attorney say; "Doctor, isn't it true that antitetanus serum is recognized specific prophylactic for lockjaw?"

GYNECOLOGY

G. Carlyle Cook, M. D., *Editor,* Winston-Salem, N. C.

Another Sign Post in Gynecology

Four months ago an unmarried white woman, 40 years of age, had an automobile accident, resulting in an injured shoulder and a bruised abdomen. The orthopedist found no gross lesion in her shoulder, but on the second and third day in the hospital she developed symptoms of intestinal obstruction, whereupon I was called on the case.

Examination showed a well-nourished, healthy-looking white woman, with moderate distention and extreme tenderness across the upper abdomen where she was struck by the steering wheel. Under treatment, this condition, as well as the obstruction, abated within 36 hours.

She was discharged from the hospital but returned to my office in three days complaining of pain and tenderness in the lower abdomen. Her past history relative to menses and regenerative organs was entirely negative. She stated that three months previous she had had a complete examination by her family physician except vaginal. He had explained to her that this was not necessary since she was not married and there were no indications.

A vaginal examination showed a large mass filling the cul de sac. Diagnosis of fibroid was made and the patient went to the hospital for immediate operation. On opening the abdomen, the entire lower half was found to be filled with granular, dense adhesions and the ometum contained a mass as large as one's hand. This was removed, and when the adhesions were separated sufficient to liberate the pelvic mass a large friable tumor of the right ovary came way in the palm of my hand All of the structures in the pelvis seemed to be involved; bleeding was profuse and there were no bleeding points that could be secured by ligature. After packing with hot sponges the bleeding abated and the abdomen was closed.

Her convalescence from the operation was fairly uneventful except that she developed a large ischiorectal abscess on the third day which was incised and drained. She was discharged from the hospital in the third week healed but with palpable induration in the lower abdomen, all the way across. She was immediately given erythema dose of deep x-ray therapy.

I saw this patient yesterday and she is the picture of health; all of the induration and pain in the abdomen have disappeared and she says that she never felt better in her life.

Of course, I am not expecting this to represent a cure of general abdominal adenocarcinomatosis as was shown by section to be grade 4, but the case is reported to show what might have been a cure had the patient had a complete examination when she called on her family physician for such examination.

Regardless of whether or not a woman, at any age, is a virgin, an examination is not complete without a thorough vaginal examination and the cervix should be seen as well as palpated. I insist on this part of the examination on all of my patients, but I had one patient to refuse and give as her reason that she had only her evidence of

virginity to prove the integrity of her character. This may be an excusable objection but the examination with modern instruments can be made without permanent distortion of the normal anatomy.

OBSTETRICS

IVAN MARRIOTT PROCTER, M.D., F.A.C.S., *Editor*

THE BLADDER POST PARTUM

NOT only do the cervix and vagina suffer traumatic injury as the result of the progress of the fetus through the parturient canal, but the adjacent rectum and bladder receive their part of the damage. All accoucheurs have observed great distention of the anal canal, breaks in the sphincter muscle and lacerations of the anal mucosa. Close post partum inspection of the vulva and vagina will not infrequently reveal tears high in the vaginal walls, breaks in the labia minora and paraurethral lacerations. Beneath the wide pubic arch of the normal female pelvis the fetus often compresses the urethra between its head and the symphysis pubis.

Together with bruising of the urethra there may be contusions of the bladder and if one inspects the vesicle through the Kelly or the Brown-Buerger cystoscope in the first few days after delivery, he quickly and easily observes the damaging effect of the forces of labor. The bladder mucosa in certain patients shows edema, hyperemia, and even submucous extravasation of blood. So, it is easy to understand why retention of urine, bacterial growth and cystitis are frequent sequelae. The sudden reduction in abdominal pressure on delivery of the fetus; the increased nervous tension due to exhaustion, post partum soreness and maternal excitement—all invite urinary retention. It is not uncommon for a patient to void a moderate amount of urine, and by catheterization immediately after delivery you get 600 to 1000 c. c. Retention (stagnation) causes distention of the vesicle and invites infection and furnishes media for the growth of bacteria that normally make escape through the urinary tract without doing harm. It is easily demonstrated by intravenous or retrograde pyelogram that the ureters lose a part of their irritability and peristaltic contractility after the fifth month of pregnancy—almost all of it in the seventh and eighth months, to produce a picture of hydroureter. Although there is a slight return of tonicity during the last month of pregnancy and a gradual increase throughout the puerperium, it seems that great over-distention of the urinary bladder, post partum, may result in back flow into the ureters.

The output of urine is increased after labor, the specific gravity is lowered; but albumin, casts, red and white blood cells, acetone and lactose may be present. Voiding should be encouraged within six hours after labor (the bladder having been emptied at delivery), and thereafter every three hours to prevent over-distention. We suggest:

1. The semi-sitting position for the patient.
2. Hot pubic compresses.
3. Warm, sterile water over the vulva.
4. Warm enema.
5. Quiet, and mild sedation.

If these are unsuccessful, the catheter should be used with strict aseptic technique. For the sake of sterility as well as convenience and time-saving the nurse should be taught to use a sterile hemostat to feed the catheter into the urethra instead of the usual finger manipulation.

All patients are catheterized for retention. That is, after the patient voids she is catheterized immediately (once daily) to empty the bladder of urine the normal contractile forces failed to expell. This is repeated until the vesicle retains less than 30 c. c. after voiding. Such emptying encourages a return of normal bladder tone, prevents bacterial growth in stagnant urine, and is a prophylactic against post partum cystitis and possibly pyelitis.

We believe in the conservative treatment of acute post partum, as well as ante partum, pyelitis. This method has been greatly aided by the competent use of sulfanilamide and sulfapyridine. On the contrary, in cases of chronic pyelitis, especially where there is obstruction to the normal flow of urine as in stricture of the ureter the ureteral catheter is indispensable and should be used to provide drainage.

In conclusion the urinary as well as the genital tract deserves careful, gentle aseptic attention post partum. Urinary retention should be prvented by:

1. Close observation.
2. Encouraging the patient to void.
3. The use of heat locally.
4. The aseptic catheter once daily after voiding until the retention is less than 30 c. c.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., Health Officer, Greenville, N. C., *Editor*

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

IN the *Journal of the A. M. A.* issue of November 25th, are set forth under the above title certain concepts relative to the development of public health activities and medical care.

These concepts are listed under eight items. We shall copy only such items as have a distinct bear-

ing on public health activities, as follows:

1. "The establishment of an agency of the federal government under which shall be coördinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.
3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.
4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.
5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.
8. Expansion of public health and medical services consistent with the American system of democracy."

They are numbered as found in the *Journal of the A. M. A.*

In view of the principles here set forth relative to the development and expansion of public health activities, it appears to us that even the most radical of the "state medicine" or "socialized medicine" groups could not find room for criticism.

Of course, only broad, general principles are outlined above and no attempt is made to give an actual working formula, the American Medical Association, evidently, feeling that a working formula is a matter to be determined locally.

Some months back, we sent to *Southern Medicine & Surgery* the following formula which we believe to be appropriate for a rural population on a county unit basis.

The plan is as follows:

1. The local medical society adopts a schedule of fees. This schedule is approved by the Board of Commissioners—the appropriating Board.
2. The County Welfare Officer certifies those eligible for free treatment (emergency treatment may be given without certification).
3. Patient has the choice of physicians in his community.
4. Bills are paid by the County Treasurer.
5. The Local Medical Society appoints a committee to sit monthly with the Board of Commissioners in an advisory capacity. The Welfare Officer should also be present.

By this plan the burden of the medical care of the indigent sick is shifted from the shoulders of the private physician to the public treasury where it belongs.

UROLOGY

For this issue AUBREY HAWES, B. S., M. D., Charlotte, N. C.

HEMATURIA—ITS CAUSES AND ITS RELIEF*

HEMATURIA, it seems to me, is the most important and significant of all the subjective symptoms related to the genito-urinary tract, and when it first appears it should be a fire-signal to every practitioner of medicine. Any patient with persistent or recurrent hematuria is sitting on a keg of dynamite (to use Dr. Lowsley's descriptive expression), until its origin has been firmly established. Blood in the urine may be caused by a large variety of diseases, and as a rule signifies some serious lesion of the urinary tract. It is rarely a constant symptom. Decidedly it is not a clinical entity. In few conditions is symptomatic treatment so inexcusable and so hazardous. It is an imperative demand for a prompt and thorough urological investigation. Cessation of bleeding is no indication of cure, yet this frequently robs the patient of early diagnosis and destroys all hope of complete eradication of the causative lesion. Except when obviously extra-urinary and nonsurgical, a knowledge of all the probabilities is essential to an estimate of its significance and seriousness; and, inasmuch as blood in the urine is a grave signal in the vast majority of instances, search for its cause is never to be neglected.

Usually a patient is seen with hematuria in one of three ways: 1) accidentally during a physical or periodic health examination; 2) when an observing individual notes a red color of the voided urine and seeks your advice; and 3) when a patient is examined because of pain in the uro-genital tract. Permanent damage to the upper urinary tract from obstructions, stones and infections is avoidable by early and prompt eradication of these. It should be the aim of every physician to detect cancer of the urological tract and everywhere in its incipiency. Real prophylaxis in the practise of urology is attainable by early complete urological investigation. Strict emphasis of this practise is our only means of saving and prolonging the lives of those affected with carcinoma of any part of the urinary tract.

Kretschmer, of Chicago, recently reviewed a series of 860 cases whose presenting symptom was hematuria. In order of frequency, the most common causes of hematuria in this series were:

	Cases
1) Tumors (benign and malignant)	325
2) Uro-lithiasis	154
3) Uro-genital tuberculosis	97

*Read before the Mecklenburg County Medical Society, Nov 7th, 1939.

4) Acute renal infections	89
5) Benign prostatic hypertrophy	64
6) Carcinoma of the prostate	43
7) Nephritis (all types)	27

Of Kretschmer's series 76.5% of the cases in which the hematuria originated in the bladder were either carcinoma or papilloma. The average length of time between the first attack of hematuria and the urological study was 28 months in this study.

Dr. Lower, of Cleveland, reviewed 798 cases of hematuria and found that 32% of the cases had new growths in the genito-urinary tract, in 11% the bleeding resulted from tuberculosis, in 16% from calculi in the urinary tract. He pointed out that 59% of the cases studied were in grave need of early and complete diagnosis if any hope of permanent cure was to be offered.

Dr. J. L. Emmett, of the Mayo Clinic, in a recent writing on the "Significance of Hematuria," states that many articles begin with a criticism of physicians for neglecting to investigate every case of hematuria thoroughly; and these articles end with a plea to stop prescribing medication for blood in the urine, but instead to urge the patient to submit to a thorough urologic examination. He is of the opinion that the medical profession as a whole is alert to this subject, but that many patients refuse the advice of their physicians and insist that symptomatic treatment be given. In closing, Dr. Emmett states "a serious duty falls on the family physician, who should not only recognize this pertinent problem but should instruct his patients concerning the serious danger of neglecting a complete investigation in every case of hematuria. He will further aid his patients by refusing to prescribe drugs of any type for this condition. Few patients who are made acquainted with the general statistics will fail to heed his warning."

Essential or idiopathic hematuria should not be accepted as a diagnostic term. Recently some British urologists have studied a series of cases with a diagnosis of essential hematuria, and autopsies have proven that, without exception, there was a discoverable etiological lesion. With our improved methods of urological study, one should never be satisfied with such a diagnosis. The term essential hermaturia is, however, frequently used by the internist when blood is passed in the urine in the various blood diseases, in hypertension and nephritis. Even in these conditions the possibility of some coincidental urologic lesion should always be borne in mind and ruled out. Levy, in 1922, in a very thorough clinical study, found that the majority of cases of bleeding for which no local cause could be found occurred in the fourth decade, and this is the period when vascular changes might well account for many cases. Undoubtedly, very early lesions of the upper urinary tract which are not demonstrable by retrograde or intravenous pyelography explain some of these cases.

I would now like to cite three cases outlining some pathological conditions of the genito-urinary tract causing hematuria.

CASE 1.—A 69-year-old man complained of marked frequency and hematuria, with a large prostate demonstrated by the aerogram. The cysto-urethrogram demonstrated the marked elongation of the posterior urethra with a distorted, very wide lateral spread. This prostate was removed by means of a two-stage perineal prostatectomy.

CASE 2.—A 38-year-old woman with attacks of left renal colic and hematuria. The retrograde pyelograms showed a large hydronephrosis and marked kinking of the upper ureter. There was no function in this kidney. A nephrectomy was done. At the time of operation the upper portion of the ureter was found to be firmly bound down to the pelvis by means of adhesions, thereby causing complete obstruction at the uretero-pelvic junction.

CAUSES OF HEMATURIA

- GENERAL (1) Ingestion of Drugs
  - (a) Urotropin
  - (b) Salol
  - (c) Quinine
  - (d) Bichloride
  - (e) Carbolic Acid
  - (f) Sometimes Salicylates
  - (g) Other
- (2) Diseases
  - (a) Malaria—Black-Water Fever
  - (b) Pernicious Anemia
  - (c) Vicarious Menstruation
  - (d) Essential Hematuria
  - (e) Hemorrhagic Nephritis
  - (f) Purpura
  - (g) Hemoglobinuria
  - (h) Other

- LOCAL (1) Urethra
  - (a) Infections
    - (1) Gonorrhea
    - (2) Tuberculosis
    - (3) Actinomycosis
    - (4) Other
  - (b) Stones
  - (c) Traumas
    - (1) Instruments
    - (2) Foreign Bodies
    - (3) External Force
    - (4) Rupture with Extravasation
  - (d) Tumors
    - (1) Benign
    - (2) Malignant
  - (e) Chemicals

- LOCAL (2) Prostate and Seminal Vesicles
  - (a) Infections
    - (1) Gonorrhea
    - (2) Tuberculosis
    - (3) Other
  - (b) Stones
  - (c) Traumas
  - (d) Tumors
    - (1) Benign
    - (2) Malignant

- LOCAL (3) Bladder
  - (a) Infections
    - (1) Gonococcus
    - (2) Tubercle Bacillus
    - (3) Colon Bacillus
    - (4) Other
  - (b) Infestations
    - (1) Bilharziasis
    - (2) Hydatid Cysts
    - (3) Other
  - (c) Stones and Other Foreign Bodies
  - (d) Traumas
  - (e) Tumors
  - (f) Other Diseases

- LOCAL (4) Ureters
  - (a) Infections
    - (1) Tubercle Bacillus
    - (2) Colon Bacillus
    - (3) Proteus Bacillus
    - (4) Other
  - (b) Infestations
  - (c) Stones
  - (d) Traumas
  - (e) Tumors
  - (f) Kinks and Strictures

- LOCAL (5) Kidney
  - (a) Infections
    - (1) Tubercle Bacillus
    - (2) Colon Bacillus
    - (3) Proteus Bacillus
    - (4) Other
  - (b) Infestations
  - (c) Stones
  - (d) Traumas
  - (e) Tumors
    - (1) Papilloma (Benign)
    - (2) Papilloma (Malignant)
    - (3) Carcinoma
    - (4) Hypernephroma
    - (5) Other Rare Types
  - (f) Other Lesions

CASE 3.—A 16-year-old girl complained of fever, a mass in the left side, and hematuria. On retrograde studies a markedly distorted pyelogram of the left kidney was found, a diagnosis of renal tumor made, and a nephrectomy was done. The pathological diagnosis of hypernephroma was made. The patient died six months after nephrectomy.

ENEMAS: USES AND ABUSES

(C. D. GASTON & H. B. WILLIAMS, Birmingham, in *J. Med. Asso.* Ala., Nov.)

Flushing of the colon with large quantities of water distends the bowel, removes all of Nature's normal lubricant—mucus—causes hyperemia and eventually, abnormal quantities of mucus.

The administration by enema of chemical solutions, formerly much in vogue in the treatment of dysentery, ulcerative colitis and other inflammatory processes, should be abandoned. They irritate, cause spasm of the colon, aggravating rather than arresting the pathologic processes.

The introduction of foodstuffs into the rectum is meritless. The colon will not absorb and utilize them. *We particularly condemn the injection of a solution of glucose.* Water, weak solutions of alcohol and physiologic saline solutions are readily absorbed and utilized. It is better to introduce 4 ozs. of fluid every 3 hrs., through a male rubber catheter, than to employ the continuous drip. Chloral and bromide by rectum in watery solution are promptly effective.

The mucous membrane of the rectum and colon is intolerant to any liquid that contains even a small amount of soap. Many cases of colitis and anorectal disease are caused by soap-suds enemas. By reason of the angry appearance of a diffusely hyperemic mucosa, patients have received a diagnosis of proctitis and colitis following a soap-suds enema in preparation for sigmoidoscopy.

We deprecate the use of the hard-rubber enema tip. In a number of instances we have observed lacerations, ulcerations and infections after the forceful insertion of such tips.

The insertion of the usual rectal tube with an end aperture is unwise. The rim of this aperture will injure friable, ulcerated, varicosed or fissured tissue. By ordinary manipulation a tube can not be inserted beyond the first rectal valve without its coiling in the rectal ampulla, or without injury to the rectal wall. Radiographic studies have proved that a rectal tube or catheter cannot usually be passed into the sigmoid without the use of a sigmoidoscope. One continues to hear of the "high" or "low" enema.

A large glass funnel to which is attached a large stomach tube with lateral aperture is the essential apparatus. A 24 F. to 28 F. catheter is the best size for anal insertion. The use of the 2-qt. enema can with long tube should be abandoned because of the unnecessarily high water pressure.

The patient is not placed upon a bedpan, unless conditions require, until the solution has been injected. There is little comfort upon a bedpan and resistance to the enema results. The enema is administered with the patient preferably in the left or right lateral posture. The knee-chest position may be employed; dorsal decubitus is used only when a patient cannot be rotated, there is a tendency to strain. Following the completion of the injection, the patient may be placed upon the bedpan or permitted to use the toilet. For gentle lavage 1 qt. should be used. For rapid expulsion 38 oz. is the limit that can be administered without regurgitation into the ileum, and with this amount the distention incites more rapid colonic contractions. *During the insertion of the catheter its tip should be directed towards the umbilicus,* and as soon as the tube is felt to pass the sphincter's grip further insertion should be discontinued. The solution is poured into the funnel from a pitcher, caution being observed to prevent the injection of air. The funnel is raised and lowered as indicated by the ebb and flow of the solution.

For frequent administration, normal saline, plain water and a solution of sodium bicarbonate are advised, t. 100, never exceeding 120. For excessive mucus 1% sodium bicarbonate is effective.

Six to 8 ozs. of olive oil, slightly warmed, can be easily self-administered through a 28 F. rubber catheter to which is attached a large catheter syringe, at bedtime and retained overnight. The oil quickly reaches the cecum. This measure is of value in cases of intestinal stasis, spastic colon, neurogenic colon—miscalled mucous colitis—and colonic diverticulosis. The oil is not absorbed and inhibits the growth of pathogenic bacteria.

For the relief of flatus better results can be gained from gently astringent and stimulating effect of a weak solution of alum.

When the fecal mass has become desiccated or impacted a hydrogen peroxide enema, 10 to 25%, is effective, administered with extreme caution. In diverticulosis, ulcerative lesions or neoplastic growth, rupture of the bowel may follow. We administer this enema personally.

Feces plugging the lower end of the colon will often lead to the accumulation of gas in the splenic flexure and of feces in the cecum—even typhlitis, and with this there may be pain resembling appendicitis. In these cases, if rectal plug is removed gently by an 8-oz. enema of warm saline, the flatulence and discomfort will be relieved. In most cases of constipation, the stagnation of feces is in the last few inches of the bowel. Similarly, in post-operative flatus, the gentle injection, through a catheter syringe, of several ozs. of warm, physiologic saline through a 24 F. male rubber catheter is a gratifyingly effective and safe procedure.

THE VALUE OF PERITONEOSCOPY IN GASTROENTEROLOGY

(E. B. BENEDICT, Boston, in *Amer. Jl. Dig. Dis.*, Oct.)

Peritoneoscopy is a safe, simple, and highly reliable diagnostic method. Errors in diagnosis have been very rare. Peritoneoscopy will confirm or refute various doubtful clinical diagnoses. Positive diagnosis by biopsy is often possible. Peritoneoscopy will avert exploratory laparotomy in certain cases.

DOCTORS IN OTHER FIELDS

2. OLD WORLD

BY

THURMAN KITCHIN, A. B., M. D., LL. D.
President and Former Dean of The School of Medicine, Wake Forest College

ARTHUR CONAN DOYLE
(1859-1930)

DOYLE is best known for his detective stories and for the creation of the imperturbable Sherlock Holmes. However he was for many years an excellent practitioner of medicine and later specialized in diseases of the eye. And when he finally abandoned medicine for writing, it was said of him that he gave up detection of errors of the body and errors of refraction of the eye for detection of errors in society, that is the detection of imaginary crime.

Doyle was born at Picardy Place, Edinburgh, May 26th, 1859. At the age of ten he was sent to Hodder, a preparatory school for Stonyhurst. After two years at Hodder he entered Stonyhurst. After graduating from Stonyhurst he entered Edinburgh University and received the Bachelor of Medicine degree in 1881 and the M. D. degree in 1885.

The year before his graduation Doyle went, in the capacity of ship surgeon, on a whaling trip in the Arctic Ocean on the whaler "Hope." He was on this trip for seven months and the experience stood him in well in his writings in later years. But Doyle wanted to see still more of the world and after graduation in medicine he took a position with the African Steam Navigation Company on the ship "Mayumba" and went to the west coast of Africa. He returned to England in January, 1882 and began the practice of medicine. He first became associated with a physician who had a large practice and was making lots of money but Doyle did not think him ethical and soon pulled out and opened an office for himself and began practice at Southsea. It was during his practice at Southsea that he discovered his literary ability, and he began writing stories for magazines during the latter part of his stay in Southsea. In addition to his private practice he served as a physician in a unit of the British Army. The Medical Service had become short of doctors and local civilian doctors spent certain hours each day in the service of the Army.

But Doyle was to see more service in the medical branch of the Army. In 1900 things began looking pretty dark for England in South Africa and again Doyle volunteered and went to South Africa with the Langman Hospital unit. Two years later, 1902, he was knighted by the British government on account of his service with this Hospital in South Africa.

And again, when the World War broke out, Doyle was one of the originators of the Volunteer Corps and he formed the first corps in August, 1914, and served as a private in this unit for four years. However, as will be seen later, his greatest contribution in the World War was in writing propaganda material.

In 1890 Doyle decided to give up general practice and specialize in the diseases of the eye. Accordingly he went to Vienna and studied at the Krankenhaus clinic. After spending the winter in Vienna he went to Paris and studied for a short time under Landolt, the most famous oculist of that city. Returning to London in the spring of 1891 he fitted a splendid office and began the practice of his specialty but patients did not come in as fast as he had anticipated and it was during this period of waiting that he began his literary career in earnest.

While Doyle was a medical student he came in contact with a man who greatly influenced his life. This was Dr. Joseph Bell, surgeon at the Edinburgh Infirmary. Dr. Bell was not only a great surgeon but was an all round distinguished man. He had a remarkable gift, not only for medical and surgical diagnosis, but could gen-

erally size-up a man's character and often even his occupation from only a brief conference. Dr. Bell selected Doyle as his out-patient clerk. Thus he had an opportunity to study Bell's methods and to observe that often Bell would find out more about the patient with a few quick glances than Doyle had been able to discover with all his questioning. Doyle in his Memories and Adventures gives this example of Dr. Bell's keen observation:

"Well, my man, you've served in the army."
"Aye, sir."
"Not long discharged?"
"No, sir."
"A Highland regiment?"
"Aye, sir."
"A non-com. officer."
"Aye, sir."
"Stationed at Barbados?"
"Aye, sir."

"You see, gentlemen," he would explain, "the man was a respectful man but did not remove his hat. They do not in the army, but he would have learned civilian ways had he been long discharged. He has an air of authority and he is obviously Scottish. As to Barbados, his complaint is elephantiasis, which is West Indian and not British."

Doyle says that in later life he used and amplified Dr. Bell's methods to build up a scientific detective to solve criminal cases.

His first popular book, A Study in Scarlet, in which Sherlock Holmes first appeared, was published in 1887 while he was practicing medicine in Southsea. The next year he wrote Micah Clarke, a historical study about Puritans. Although he had difficulty in getting this book published, having received discouraging reports on it from many publishers, he finally sent it to Longmans where the reader liked it. It was promptly published and appeared in February, 1889, and it had a good sale from the very beginning. Doyle considers it the cornerstone of his later literary reputation. Then followed The Sign of Four in the same year. In 1891 he published The Adventures of Sherlock Holmes which first appeared in *The Strand* magazine and later in book form which immediately became very popular. However the character Sherlock Holmes had already appeared in his A Study in Scarlet in 1887. Also appearing in 1891 was The White Company; in 1893 The Memoirs of Sherlock Holmes; Rodney Stone in 1896 and The Exploits of Brigadier Gerard in this same year. In 1894 he wrote a play entitled The Story of Waterloo. The Hound of the Baskervilles in 1902, and in 1905 The Return of Sherlock Holmes. The First Fate appeared in 1909, and in this same year The House of Temperley, while in 1913 appeared The Poisoned Belt.

Notwithstanding this large output of stories and plays, Doyle had been doing some more serious work. From 1900 to 1902 he published two books in defense of the British Army in South Africa. One under the title The Great Boer War and the other The War in South Africa, Its Causes and Conduct.

During the World War he actively engaged in writing propaganda for the Allies. His Cause and Conduct of the World War was translated into twelve languages in addition to the English.

His most voluminous work was The History of the British Campaign in France and Flanders, comprising six volumes, and appeared in the period between 1915 and 1920. His autobiography under the title My Memories and Adventures came out in the year 1924.

During Doyle's latter years he became a champion of Spiritualism and put all of his energy and talents in a vigorous campaign of lecturing, debating and writing on the possibility of proving by spiritualism the existence and condition of human life after death. His best known works concerning Spiritualism are The New Revelation, which appeared in 1918, and The History of Spiritualism in two volumes, published in 1926.

GEORGES CLEMENCEAU

(1841-1929)

"The Tiger of France" was born September 28th, 1841, in the little town of Mouilleron-en-Pareds, on the Bay of Biscay. His father and grandfather were physicians. At an early age it was decided that he should follow in the footsteps of his father. Accordingly, after completing the ordinary curriculum at Nantes, he took the examination and qualified as a medical student and entered the hospital of that city. After studying awhile at Nantes he went to Paris, at the age of nineteen, and entered the hospital. After receiving the doctor's degree from the University of Paris he returned to Montmartre and began the practice of medicine.

It was already evident, while he was a medical student, that Clemenceau was meant for something more than a country physician. Furthermore, it was certain that a young man of such force and of such unpredictable nature, would not take things easy but would explore many fields. A man of great native ability, well educated both in Liberal Arts and in Science, highly sensitive to surrounding conditions and with a determination to overcome obstacles of every description, Clemenceau was a natural leader.

Conditions in France at the time Clemenceau was a medical student in Paris were ripe for the development of just such a man. The sixties formed a critical period in the history of France. Clemenceau arrived in Paris when the Second Empire was at the height of its fame and influence. Paris was a great banking and financial center. There were many well-to-do people who had accumulated fortunes and the peasants and workers were enjoying a measure of prosperity. Napoleon III was still popular and considered a statesman. Thus there was little on the surface to indicate that the Empire was about to fall. Clemenceau was an earnest student but he also observed the social conditions that he saw around him which greatly impressed him. He brought with him from La Vendee his own ideas of his rights and duties as a democrat. He had inherited from his father his conception of the rights of free speech and of free press. That was a dangerous idea for a young man to hold in Paris at that time.

His doctor's thesis De la Generation des Elements Anatomiques showed knowledge of his professional work but it also showed his tremendous interest in the social conditions of the time. Throughout his life he held to the same views that he had discussed in his thesis for his doctor's degree.

While yet a medical student he contributed to some of the radical sheets of the day. After writing one such article, in 1862, Clemenceau was placed in prison at Mazas for a period of two months for the purpose, it was said, of giving him time to think upon the disadvantages of his political creed. After his prison sentence he returned to his medical classes and took his degree three years later—1865, and returned, as already stated, to Montmartre.

Early in 1866 Clemenceau visited America—just as the United States was emerging from the War Between the States. He wrote several articles to *Les Temps* of Paris on the industrial and social conditions of America. Clemenceau was much impressed with the progressive ideas of John Stuart Mill and he came to America primarily to see how the democratic theory of government actually worked in affairs of government. While in America he translated Mill's Auguste Comte and Positivism into the French language. Also while in America he taught French in a girls' school at Stamford, Connecticut. He would go to Stamford each Monday and give lessons on Monday and Tuesday, returning to New York Tuesday evening. During this time he fell in love with one of his pupils, Miss Mary Plummer, of Springfield, Massachusetts, and they were married in New York, June 23rd, 1869.

Clemenceau spent three years in America, returning to France in 1869. He began actively practicing medicine in Montmartre. His practice was chiefly among the working classes. Apparently, he never was concerned so much about making money practicing medicine but did an exceedingly large practice among the poor

people, much of it without pay. But this gratuitous medical service to the people and his adherence to democratic principles soon gained for him great popularity and personal devotion from the men and women of Montmartre.

By this time the Second Empire was rapidly giving way and it was becoming manifest that a life-and-death struggle between democracy and the imperial philosophies was to be fought out on French soil. The line-up was clear—Republicans, Radicals and Socialists on one side and the Imperialists upon the other. Clemenceau championed the Republican view, became a Radical and offered himself for the mayoralty of Montmartre. He was overwhelmingly elected and thus began his long and stormy career as a politician and statesman which finally culminated in his Premiership of France during the Great War.

The people were so well pleased with his conduct as mayor during the Revolution of 1870 that they decided to send him as their representative to the National Assembly. On February 8th, 1871 he was elected as a Radical to the National Assembly.

In 1876 he was elected a member of the Chamber of Deputies and joined a group of young Republicans who were establishing a new regime under the leadership of Gambetta and Ferry. Two years later Clemenceau turned Radical and joined the Jacobins and became a leader of this faction which split from the Republican party.

In 1880 he started his newspaper *La Justice* and never again did he lay down his pen but became one of the most voluminous and critical political writers of any age. *La Justice* became the chief organ of the Radicals. For the next fifteen years he used both his eloquence as an orator and his gift as a writer to bring about the downfall of one ministry after another. In 1893 he was defeated for reëlection as a member of the Chamber of Deputies and his enemies thought that his political career was ended. Thus, at the age of 52, he left the Assembly the first Parliamentarian of France, began writing, and became the first journalist of France.

Four years later, the Dreyfus affair attracted attention throughout the civilized world. Clemenceau took the part of Dreyfus and dedicated his new journal *L'Aurore* to the task of obtaining a reversal of the Dreyfus sentence and thus again Clemenceau became vitally interested in the affairs of the Republic.

In 1893, Captain Dreyfus, a member of the General Staff of the French army, was convicted of treason by a Court Martial. The verdict was unanimous and practically everybody accepted it as final. The trial had been held behind closed doors and in utmost secrecy. Clemenceau accepted the verdict and thought that Dreyfus was guilty, but three years later he was persuaded to talk to one who thought Dreyfus innocent. This did not convince Clemenceau of Dreyfus' innocence but it did convince him that the trial had been irregular. He then joined Zola in a campaign for a retrial. Never did a man undertake a thing against greater odds and never did Clemenceau show more courage nor less regard for popularity than he did in throwing his whole power into the case.

Zola now published his famous letter in Clemenceau's *Aurore* at the suggestion of Clemenceau. This letter summed up the evidence against the General Staff. Zola, Clemenceau and the *Aurore* were brought into the court on charges of treason and libel. Clemenceau conducted his own defense.

Clemenceau wrote daily articles in his journal calling for a new trial and defending Dreyfus. These articles all put together make four volumes.

Finally after five years a retrial was held at Rennes. It was still a Court Martial. Dreyfus was found "Guilty, with extenuating circumstances," and later Dreyfus was pardoned. A committee was appointed to examine the entire Dreyfus case. In 1906 this committee declared that Dreyfus had been a victim of conspiracy based upon perjury and forgery. The whole thing was, in present day parlance, a frame-up. Dreyfus was exonerated and restored to his position in the army.

This result was largely due to three men—Zola, Jaures and Clemenceau; but Clemenceau did more than anyone to arouse and change public opinion concerning the matter.

In 1902 Clemenceau was elected to the Senate and in 1906 he became Premier for the first time. In 1909 he resigned from the Premiership but continued his labor to keep the French nation alert to the possibilities of foreign aggression.

At the outbreak of the World War he was editing *L'Homme Libre*. He was still a member of the Senate and became a member of the Military Committee. But he was a sharp critic of the manner in which the war was being prosecuted. Day after day in the editorials in his *L'Homme Libre* he poured out his wrath on the conduct of war. His attacks became so violent that his journal was suppressed and he established another journal, *L'Homme Enchaine,* to continue his fight against the policy of the government.

But the time came in 1917 when the position of France seemed almost hopeless and the French people turned to Clemenceau as the one man who could successfully prosecute the war. Accordingly, in November, 1917, Clemenceau became Prime Minister and Minister of War of France. Thus at the age of 76 "The Tiger" assumed the greatest task of his career. His conduct of the War and his part in formulating the terms of the Versailles Treaty are recent history. He was generally proclaimed as "The Saviour of France."

In addition to his extensive journalistic writings, Clemenceau wrote many books and plays. The more important ones are: La Melee Sociale; Le Grand Pan, Les Plus Forts, Au Fil des Jours and Les Ambuscades de la Vie.

Notwithstanding his busy and turbulent career, Clemenceau never ceased to give medical advice to his old patients of former years and to those financially unable to pay for medical advice.

After the Treaty of Versailles was signed he retired to his home in Vendee, spending the remaining ten years of his life in the solitude of his study.

President's Page

Tri-State Medical Association of the Carolinas and Virginia

THE amount of benefit derived or the success achieved in one's vocation is fairly proportionate to the amount of effort expended. The more you put into your work the more you are going to get out of it, and there is nothing more true when it is applied to the individual physician. A glance over your local County Society membership roll will show men who have given most of their lives to the intensive study of medicine and are now enjoying its rewards. Others are not so successful because they have not been sufficiently interested. Consider the newcomers to your city, the younger men, some of whom have been well trained and are now exerting themselves in an effort to acquire more knowledge by investigation and study. These men are interested first of all in medicine and secondarily in pleasure and hobbies. From the very beginning we can very nearly determine which of our young doctors are going to be the most successful and are more apt to win the esteem and confidence of their fellow physicians and patients. As time passes on they enjoy success until that time of life when patients always begin to leave us for the younger and more energetic doctor. This is only the natural course of events which has or will come to each of us. At this time of life the doctor begins to realize the value of his success, for as his private practice leaves him he is being called in consulation by the rising generation of physicians for his opinion and advice, made valuable through years of conscientious work. In our Tri-State Medical Association we have had and have many able and distinguished physicians and surgeons who from the very beginning of their careers established themselves as leaders and are largely responsible for the progress medicine has made in our three states. What they have accomplished will long be remembered. Consider such men as Drs. J. K. Hall, Stuart McGuire, Shelton Horsley and Southgate Lea of Virginia; Crowell, Royster and Highsmith of North Carolina; Robert Wilson, F. H. McLeod, LeGrand Guerry of South Carolina and many others. "Ye shall know them by their fruits." I once noticed on the wall of an office these words, "I am a great believer in luck, the harder I work the more luck I seem to have."

In contrast to the type of physician we are considering, there are doctors, and there are many, who only partially are interested in their work, using it only as a means of livelihood. They still practice as they did twenty years ago. They occasionally attend medical meetings but seldom, if ever, can be persuaded to appear on a program. They cannot present case reports, because they keep no records. Many of these gentlemen are found in every community. As they grow older their practice likewise becomes less and less, until the time comes when they cease to make a living. They have never acquired any unusual ability and therefore their opinion and advice are not desired even by younger men of less experience. Is there anything quite so pitiful as an old doctor whose practice is gone, has few friends and no means of support? This happens everywhere in the cities and in the country and we have only to look around to see it. Of course, there are many of us who may be classed between these extremes, however, there are so many in the extreme groups that we cannot overlook them.

With these thoughts in mind let us not forget we are obligated through our societies, which represent the highest standard of organized medicine, to interest young men in our communities, who are beginning the practice of medicine and impress upon them the necessity of keeping in contact with the medical society, encouraging them to attend meetings, appear on programs and to make regular visits to the larger clinics. They must create the interest in their work before they can hope to succeed. There are doctors in the Carolinas and Virginia who are not affiliated with County societies and there are numerous doctors who are members in name only, drifting along to an uncertain end. These are the ones whom we can and should encourage. Bring them to your County Society meetings, the State and Tri-State meetings. I would like to see each member of the Tri-State Medical Association select one or two young doctors in the near future. Give them advice on these matters. You will not only help them but also your fellow citizens who are calling on these physicians for care in time of illness. This is real medical missionary work, the purpose of which is to prevent the inexperienced doctor from taking the path of least resistance by teaching him what is necessary to do in order to accomplish his purpose in life.

—*A. E. BAKER*

SOUTHERN MEDICINE & SURGERY

Official Organ

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

JAMES M. NORTHINGTON, M.D., *Editor*

Department Editors

Human Behavior

JAMES K. HALL, M.D.....Richmond, Va.

Eye, Ear, Nose and Throat

EYE, EAR AND THROAT HOSPITAL GROUP.....Charlotte, N. C.

Orthopedic Surgery

O. L. MILLER, M.D.
JOHN STUART GAUL, M.D. .....Charlotte, N. C.

Dentistry

J. H. GUION, D. D. S.....Charlotte, N. C.

Urology

HAMILTON W. McKAY, M.D.
ROBERT W. McKAY, M.D. .....Charlotte, N. C.

Internal Medicine

GEORGE R. WILKINSON, M. D. .....Greenville, S. C.

Surgery

GEO. H. BUNCH, M.D. .....Columbia, S. C.

Obstetrics

HENRY J. LANGSTON, M.D.....Danville, Va.
IVAN M. PROCTER, M.D.....Raleigh, N. C.

Gynecology

CHAS. R. ROBINS, M.D.....Richmond, Va.
G. CARLYLE COOKE, M.D.....Winston-Salem, N. C.

Pediatrics

G. W. KUTSCHER, JR., M.D. .....Asheville, N. C.

General Practice

J. L. HAMNER, M.D.....Mannboro, Va.
W. J. LACKEY, M.D.....Fallston, N. C.

Clinical Chemistry and Microscopy

C. C. CARPENTER, M.D.
R. P. MOREHEAD, B.S., M.A., M.D. .....Wake Forest, N. C.

Hospitals

R. B. DAVIS, M.D.....Greensboro, N. C.

Cardiology

CLYDE M. GILMORE, A.B., M.D.....Greensboro, N. C.

Public Health

N. THOS. ENNETT, M.D.....Greenville, N. C.

Radiology

Therapeutics

J. F. NASH, M.D.....Saint Pauls, N. C.

Tuberculosis

JOHN DONNELLY, M.D.....Charlotte, N. C.

Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage

This Journal having no Department of Engraving, all costs of cuts, etc., for illustrating an article must be borne by the author.

CHRISTMAS PREVENTIVE MEDICINE

So far has the Christ's mass lost its original significance that few there be who think of the obvious fact that holiday is but a modern spelling of Holy Day. With this change in concept have come many changes in practices, some of great concern to doctors as guardians of the people's health.

We may well ignore the excesses at table incident to the season. It is not likely that anything we would say as to such indulgence would do any good. But there is a custom of the season on which we would do well to exert our influence.

Every Christmas, throughout the South—the North does most of its noisy celebrating on the 4th of July or when a new celebrity comes to town—we read of young people killed, blinded and maimed by fireworks. Most municipalities have made laws forbidding the sending off of fireworks within their borders. Few of these laws are enforced with any vigor, probably because those in authority remember that they were allowed this privilege when they were boys. And some of these city and town fathers provide this form of entertainment for their youngsters in such a way as to give more happiness and without any element of risk.

It would be well for us doctors to prevail on the men in charge of public funds in our cities, towns and villages to make available suitable sums for purchasing supplies of fireworks, and a fireman, policeman or mayor to set them off at some appropriate time and place.

This appeal would be successful at most places. At those whose officials turn a deaf ear, a number of fathers of children who might otherwise be injured could well afford to contribute to a joint fund and everybody assemble to enjoy the display. The cost would be very little.

The plan has everything to recommend it—including keeping before the people the fact that their family doctors are alert to, and active in, health maintenance.

THE TRI-STATE MEETING IN FEBRUARY

ON the last Monday and Tuesday in the second month of the new year there will be held at the John Marshall Hotel in Richmond the Forty-second Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia. Some months back, in planning for this meeting, it was decided, as to guest speakers, to confine our invitations to a few of the small number who have recently made noteworthy additions to medical knowledge which additions have improved medical practice.

Some of those chosen by our members in answer to requests sent out were unable to accept the invitation. Those who will contribute to our program assure contributions to satisfy the most exacting demands.

Who among us has not been startled by news that gratifying results have been obtained in advanced cancer by freezing the patient? And who has not craved authentic, detailed information from headquarters? Dr. Temple Fay, of Temple University, will, for an hour, supply this information.

The magical endocrine glands and their products are more written about, probably, than anything else in the medical field. We all know there is great potency in them. But we can not believe all we read. Indeed much of what we read here conflicts with much of what we read there. Who is to winnow the chaff from the wheat; to tell us what has been established as useful, what as useless and what as promising? Dr. Emil Novak, of Old-New University of Maryland.

Appendicitis! "Men may cry, Peace, Peace;" but there can be no peace from study and discussion of appendicitis so long as there is no decrease in the thousands annually slain by this disease. Dr. Owen Wangensteen, of the University of Minnesota, has facts and ideas on the subject. He has been invited to present both.

For a number of years after our Canadian friends made their now world-famous discoveries on the potency of a substance they derived from bovine fetuses, attention was centered on lack of insulin and excess of sugar. Then some began to note that the picture had a reverse. Dr. Seale Harris, of the University of Alabama, was one of the first to direct attention to the fact that many patients elaborate so much insulin that they need an excess of sugar, and need it frequently. Dr. Harris will bring information from headquarters as to this condition.

Our own psychiatrists keep us reminded of the devastating effects of fear. They have asked that Dr. Lawrence Woolley be invited to come to our meeting and tell us what his observations and investigations at Sheppard and Enoch Pratt Hospital have taught him; and he has chosen as his subject, Morbid Fears.

Medicine, in its war on Cancer, has won a number of skirmishes; but, though the war goes on with no let-up, only the eye of Hope can discern evidences that the enemy is being conquered. One of the great difficulties in the way has been the difference in behavior of what looked to be the same kind of cancers. Much has been done toward clearing up this obscurity. Dr. Albert Broders, of the Mayo Clinic, who is constantly classifying and differentiating cancers, will tell us how to know that a certain cancer is not so much of a cancer as is some other cancer.

Our president will deliver an inspiring address. Our members will, as always, contribute essays of the first order.

All good doctors who want to be better doctors come and sit with us.

A Month of General Practice

The Editors of this Journal's Department of General Practice of Medicine and Surgery were asked some time ago to keep an accurate record of their practices for a month, and send in the lists as the basis for some general comment. These reports have come in, in excellent form, and very instructive they are.

It is astonishing to see how nearly parallel these reports run. They show that these doctors are busy men, that they are alert to their opportunities and conscious of their responsibilities—and that they are meeting those responsibilities.

A synopsis of the month's work of these two general practitioners should interest all doctors.

Forty-three persons were given cold vaccine, nine diphtheria toxoid, and five were vaccinated against smallpox.

Thirty women received prenatal care. Two of these were found to react positively to the Wassermann test. One was unmarried.

Fourteen examinations were made to provide health certificates, nine of these preliminary to marriage.

Wounds of the extremities numbered 23. Conspicuous among wounds were the results of a child being hit on the head by a windlass, a boy falling off a house and breaking his arm, a briar scratching a man's eye while on a bear hunt, a girl breaking her arm playing baseball, a man burning his hands while moving cotton away from a burning building.

Nineteen cases of acute gonorrhea were seen, about evenly distributed as to sex. There were two cases of gonorrheal epididymitis, and one of prostatitis; four of simple and one of cancerous prostatic hypertrophy.

Each of the two saw eight cases of acquired syphilis. One saw one case of congenital syphilis.

Fifteen infected wounds of the hand, three cases of carbuncle, eight of furuncle, twelve of acute tonsillitis, four peritonsillar abscesses, nineteen of tonsillitis, twenty-four of influenza, three of bronchopneumonia, two of lobar pneumonia, nine of bronchitis, four of pharyngitis, two of laryngitis, four of sinusitis, three of otitis media, 10 of acute coryza, six of Vincent's disease, three of erysipelas, twelve of pyelitis, eight of cystitis, three each of acute multiple arthritis, myositis and acute chole-

cystitis, with six cases of fractured ribs, eight miscellaneous automobile accidents, 10 labor cases, twenty-two instances of prenatal care and twelve post partum examinations would be enough to keep two doctors busy.

In addition they took care of four patients with asthma, three with hayfever, six with eczema, eighteen with neuritis, ten with internal hemorrhoids, four with varicose veins with and without ulcers, twenty with hypertension, fifteen with cardiovascular-renal disease, ten with chronic cholecystitis (four with gallstone colic).

Also, in that month these two doctors treated six cases of stomatitis (two of these thrush), four of dermatitis venenata, eight of uterine misplacement, three of acute nephritis, five of diabetes, seven of eroded cervix, six of "nervousness — no couse found," six of psychosis, one of involutional melancholia, "three following labor—two in single girls," six of threatened abortion, three of miscarriage, three of acute appendicitis, three of hyperthyroidism, two of hypothyroidism, two of pellagra, four of irregular menstruation, six of ring-worm infection, five of impetigo, two of acute pleurisy, three of apoplexy, two of multiple sclerosis, four of trichomonas infection, four of leucorrhea probably due to trichomonos.

There were eight acute gastric upsets, two cases of catarrhal jaundice, three of angioneurotic edema, two of acne, three of worms, two of epilepsy, two of ingrown toenails and two of hydrocele.

The tour of duty for the month included cases of acute alcoholism, herpes zoster and simplex, migraine, hernia, hemorrhage from gums following tooth extraction, splinter under toe-nail, food poisoning, postoperative adhesions, tuberculous arthritis, advanced pulmonary tuberculosis, arrested pulmonary tuberculosis, fractured ribs, cut scalp, acute osteomyelitis, submaxillary adenitis, acute oöphoritis, gastric ulcer, sacroiliac subluxation, acute myositis, ischiorectal abscess, acute nephritis, acute mastitis, tuberculous adenitis, pterygium, erysipelas, pernicious anemia, diaper rash, fibroid uterus, pruritus vulvae, convulsions in children, urticaria, secondary anemia, feeding cases, acute salpingitis, acute cellulitis of different parts, mucous colitis, fissure in ano, postoperative dressings, pruritus ani, nausea of pregnancy, malnutrition, rickets, phimosis and ovarian cyst.

Among the disease conditions of which one only was seen are a good many diagnosis of which reflects great credit on the doctor. These include Raynaud's disease, Buerger's disease, lung infarction (confirmed by autopsy), coronary thrombosis, spasmophilia and vitamin deficiency of pregnancy, Meniere's disease, pituitary deficiency, hepatic cirrhosis, beriberi, perinephritic abscess, lateral spinal sclerosis and glaucoma.

Equally creditable is the willingness to put down as diagnoses hysteria, tongue-tie, obesity, diarrhea, mash in face by automobile, sprain of knee, gastric neurosis, laceration of ear, cracked nipples, bed wetting, horse-bite of finger, constipation, stye, eye strain, sprained ankle and eczema. It is much better to state just what we know to be true in plain words than to conjecture in high-flown phrase.

Both Dr. Hamner and Dr. Lackey say that some diagnoses are not guaranteed. It may safely be assured that the margin of error is small.

This report is submitted to our readers as a cross section of medical general practice in this part of the world. We believe it will interest and inform a great many. It should help those who are casting about for subjects on which to write papers for general medical meetings. It attests the scope of general practice, and how much of it is made up of conditions, little considered in formal medical disquisitions; but, withal, pestiferous as all get out to the one afflicted, and demanding earnest, intelligent attention.

Everyday Wounds

Wounds are a part of Everyday Medicine, and an important part. Look over the list of conditions that, in recent weeks, brought patients under the care of two good doctors in this section (page 625), and see how much of the daily work of our family doctors is made up of wounds.

The importance of the subject being realized, attention is at once attracted by the prominence given it in the December issue of the *Southern Medical Journal*[1].

The earnest admonition of some of those high-up in surgery that all surgery be regarded as major, taken with the sound teaching that major surgery should be done by none other than those advantageously situated and specially and long trained for this work, tends to confuse those who are honestly endeavoring to do by their patients as they would be done by. A good many of us believe that it would be no more reasonable to refer the average case of accidental wound, or of other surgical condition encountered in our daily work, to a specialist in surgery, than to employ a certified public accountant to verify the addition and subtraction on the slips handed to us with our groceries at the A. & P.

Dr. Douglas' article is not one of those which, between the lines, keeps saying *refer 'em to me*. Instead, its purport is—*here's the way for you to do what is necessary*. Not too much effort at steri-

1. Leading article—"Advances in the Treatment of Everyday Wounds," Beverly Douglas, M. D., Nashville.

zation; protection of sensitive nerve endings, the use of gauze moistened with saline solution and moisture kept in by oiled muslin or cellophane; *in*frequent dressings; firm, direct adhesive strapping; layer-by-layer closure of deep wounds; avoidance of tension by undercutting; removal of devitalized tissue; not-too-tight suturing; ice packs early; rest to the part; replacement of ends of fingers, ears and noses; the use of pinch skin grafts; *careful* investigation of all puncture wounds, often carried to the extreme of not removing the implement until the patient is on the table and prepared for any development; locating foreign bodies by the fluoroscope, using few drops of procaine, inserting needle and holding in contact while cutting down and removing—all these practical matters are elaborated.

Also, controlling bleeding and splinting adjacent joints while getting the patient to a hospital; not doing too much when the patient has been got to the hospital; calling a plastic surgeon early in face injuries; use of bichloride solution, followed by saline; abstinence from use of iodine *in* wounds or *after* any wet technic; use of a minimum of sutures and avoidance of tension; cherishing heat and firm pressure; the advantages of silk as a suture material; handling with least trauma; the beneficial effect of high-protein diet and of vitamin A on wound healing; advantages of nonspecific protein therapy—these, too, are gone into in a comprehensive way.

Granulating wounds usually do best without antiseptics. The use of chemicals by vein to combat wound infection has little standing. Certain streptococcus infections yield to zinc peroxide; skin gangrene due to *Endamoeba histolytica* to chiniofon and emetine, along with complete excision. Dakin solution is of great benefit in massive wound contamination. Don't let granulations become dry. The effects of lights and rays are not established.

The article concludes with the wise adjuration that a certain aim should be kept in mind—to provide conditions favorable to healing.

Testing the Urine for Sugar Usually Adequate

The paper of Dr. Robert Wilson, Jr., carried in this issue, has a welcome message for family doctors who have been pretty well convinced all along that testing the urine for sugar is a reliable guide to general management of their diabetics, but who felt the need of a statement from some one in authority in support of this conviction.

Regulation of the level of the blood sugar, Dr. Wilson tells us, may be accomplished in the usual patient by means of the simpler urinary sugar determinations.

It is recommended that a few simultaneous urine and blood tests for sugar be made, to learn the height of the threshold. If we find some sugar in the urine when the blood sugar is no more than 50% increased we may accept the urinary examination as an adequate test.

The whole of this paper is on the side of simplicity, well calculated to encourage doctors to manage their own cases of diabetes in an improved manner, conscious that these patients are being cared for capably and safely.

The Best Way to Prevent Smallpox

Obviously, the best chance of getting permission to vaccinate against smallpox prior to starting to school is in the first few days of life. The doctor is already in charge, the baby is little disposed to complain, and vaccination done with any care is little more than a flea-bite.

Objection has been made to vaccination at this time on the ground that a newborn baby will not manufacture antibodies, and so vaccination at this time will not protect against smallpox.

Recent work[1] appears to disprove this contention, and to set aside this objection. It appears that vaccination in the first few days of life is protective for *at least* two or three years.

Here is our real opportunity to rid the country of smallpox. A case in which a baby girl contracted smallpox while being taken to a doctor's office to be vaccinated came under our own observation. And that lady is terribly pock-marked to this day.

Nobody knows how long successful vaccination protects against smallpox. In an epidemic under our own care some 200 came down with the disease and some thousands were vaccinated or revaccinated; and the only plainly successful vaccination of a person who had a plain, typical vaccination scar was an old minister who had his only previous successful vaccination in the Confederate Army during the War between the States.

In the course of that epidemic many newborn babes were vaccinated, and not one of them showed the least ill effect, locally or generally.

Can we not have a united effort on the part of all doctors to send in report of successful vaccination as a part of report of birth? And that would bring up questioning parents and older children about their own preventive inoculations, and bringing these vaccinations up to date.

1. H. H. Donnally, M. D., Washington in Jour. A. M. A., Nov. 11th.

OBITUARY

DOCTOR FRANK L. HERMAN

Dr. Frank L. Herman has gone to his reward. On Saturday, October 28th, soon after having passed the 79th milestone of his life, he breathed his last.

A practicing physician for fifty years, Dr. Herman was a graduate of the University of Maryland, Baltimore, and the Louisville Medical College, Louisville.

From the proverbial Country Doctor Dr. Herman came to be an eminent practitioner of modern medicine, continuing active in his profession until stricken by his last illness.

An editorial in the Catawba *News-Enterprise* said: "The death of Dr. Herman, although virtually sudden, was not unexpected, at the patriarchal three-score and ten. He will be mourned and missed by thousands throughout the country. He has left a heritage in an exemplary life of unselfish service and devotion to mankind that will last through the ages."

Men and women are born into the world now and again to personify the kindlier virtues. Their destiny is not to win fame nor to accomplish mighty deeds. The circle of their lives may be limited and their influence upon the larger aspect of their world may be scant and brief. But within the natural orbit of their careers they have the power of their quiet yet pervasive example. Their modesty and reticence are inspiring, their gentle and courteous demeanor refreshing and remedial. Their knightliness enriches mankind; and that explains the sorrow inherent in their passing.

In every generation there are a few men and women, who, because of some distinguishing attributes, such as philanthropic aims, or intellectual achievements, have won the respect and love of their fellowmen. It is these men and women who raise the average of humanity, and by their words and deeds brighten the world about them.

Such a man was our distinguished citizen, doctor and friend, Dr. Frank Herman. We are familiar with his achievements. They have been, through many years, a source of inspiration to high endeavors. All of this has won for him the warm place which he will ever hold in our hearts. Our lives will be richer and fuller because he lived.

It is a melancholy pleasure to pay tribute to the memory of a man who was both wise and good.

Dr. Herman had a great capacity for friendship. The sincerity of this friendship could never be doubted. He was fair in all his dealings with his fellowmen. He always made a fair bargain—one the benefits of which were mutual, for he believed the bargain with unequal benefits was not only futile, but immoral. Having made a fair bargain, he stood ready to perform his part in letter and in spirit.

The chief elements of his strength were his moral character and his religious earnestness. He reached port by toil, by eyes uplifted to the stars and by the daily grip of God's strong hand. It is character that counts in the great crises of life. Far above his broad knowledge, deep wisdom, and well- reasoned convictions on life in general, the great strength of Dr. Frank Herman was in that patience and far vision and confident faith which grew out of his moral convictions and dependence on the Source of all power.

The fragrance of his life still abides to inspire others as he inspired, to serve as he served; the years will not dim his memory.

My life has been made brighter and better by having had the opportunity to associate with him and to know him so well. He was always actuated by the highest aims and the noblest thoughts He, indeed, believed and exemplified "an honest man is the noblest work of God." He has gone to his reward, but he has left a record of which his family, friends and acquaintances may well be proud. The world is better because he lived here and mingled with his fellowmen.

I think I can see in the life of Dr. Herman that

the definition of success was fully met. In the closing remarks of that splendid address of John Temple Graves at the grave of Henry W. Grady we hear him say these words:

"I have seen at midnight the gleaming head light of the giant locomotive rushing onward through the darkness, and I thought the spectacle was grand; I have seen the light come over the eastern hills in glory, driving the lazy darkness before it like mist before a sea-born gale, till leaf and tree and blade of grass sparkled in the morning rays like myriads of diamonds, and I have known that it was grand; I have seen the lightning leap athwart the storm-swept sky, hovering over chaotic clouds and howling winds, till cloud and darkness and the shadow-haunted earth flashed into noon-day splendor, and I have known that it was grand. But the grandest thing next to the radiance that flows from the Almighty's throne is the light of a noble and beautiful life shedding its benedictions on the destinies of men, and at last finding its home in the bosom of God!"

Surely the life of Dr. Frank Herman was such a life, noble and beautiful, and an inspiration to all who knew him.

My venerable friend, hail and farewell. Light lie the earth upon you; soft be the sands that cover you; green, green be the carpet beneath which you rest. In harmony with the beneficent decrees of an All Wise Providence, I doubt not that when this earth life is ended we shall meet our friend and colleague where billows never break nor tempests roll.

I am glad that, though we cannot touch his hand, we still can feel his life. His body rests in peace beneath the fading flowers, but he still lives within our hearts. His spirit is in our midst, even as we wait to speak anew his virtues.

We bow on reverent knee to the intrepid hero—the general practitioner. Hard, exhusting labor is his lot; his road the *via dolorosa* of suffering; his delight the conquering of this suffering. There is nothing spectacular in him—no dramatic gestures—yet his career is all drama. He encounters comedy in the imaginary malady, as satirized by Moliere; tragedy is present in the vandalism of the Grim Reaper.

Every accouchement graced by his presence makes him a godfather, a guardian of the child he has assisted into the world. With his knowledge of the forebears and their tendencies he can anticipate the predispositions of the offspring, and as long as the subject remains in his bailiwick he has an observant eye for its physical good. The Family Doctor, he is called. True, once initiated into the domestic circle he becomes a composite of Father Confessor and Good Samaritan.

This man of toil and skill has no labor union to regulate his hours of work. His is a twenty-four-hour clock; you will find him at work at any and sometimes all of the hours of the day and night. Calls come at all times—for sickness and affliction are no respecters of hours. To him all seasons are the same. The call of his suffering people reaches him in the dark as well as in the light. When the storms of winter are on the land, as when the air is vibrant with torrid heat, this battler against pain and disease and death buckles on his armor and goes forth to wage a mighty warfare.

True, no pantheon tabernacles his name, no bronze and marble perpetuate his fame, no Rota or Congregation sits to determine his place on the calendar of saints, but he is firmly canonized in the affections of those whom he serves and succors.

As long as progressive and faithful physicians carry on their practices in every section of our country, we need not fear for the future of our great American institutions.

Let us resolve that Dr. Herman's life has not been in vain; that the high principles which actuated him shall henceforth have an uplifting influence upon us so that the good which he did may endure forever.

Peace to his ashes! Honor to his name! Immortality to his memory!

—*JAMES W. DAVIS, Statesville.*

DR. FRANK M. REGISTER

Dr. Frank M. Register, died on the 28th of last September at the age of 69. He was born in Cumberland County, received his academic education at Davidson and was graduated from the Kentucky School of Medicine in 1893. Surviving is his widow, Mrs. Mabel Durham Register.

Dr. Register did private practice for a while in his native State and then entered public health work, where he could devote himself entirely to his greatest love, preventive medicine. He served in the State Health Department at Raleigh and later as director of Public Health in Wayne County. Elected to the superintendency of the Caswell Training School six years ago, he has ably fulfilled every requirement of a good executive, a wise counselor and a good doctor. He had a keen sense of differentiation and this served him well in the mass of problems which confront one charged with the administration of an institution of this kind. A man must be more than a doctor for the superintendency of Caswell Training School and Dr. Register was more than a doctor.

As his successor at Caswell, I can see and feel so much of the excellence of what he did here

that I have serious doubt that I can ever equal his record. He was an able medical man, a good student of his problems, and he met everyone of these problems in an honest, conscientious and fearless way.

—*W. T. PARROTT.*

NEWS

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY

This society was founded in 1895 with the late Dr. Edward B. Dench, of New York, as first president. This is the largest society of otolaryngologists in America, the majority of the active fellows coming from the East and Middle West. Membership is by invitation, each candidate being required to submit a thesis upon some original work or study in otolaryngology.

Among Southern physicians who have been president of this society are the late Dr. Dunbar Roy of Atlanta, and Dr. J. W. Jervey of Greenville, S. C. The best known Fellow Emeritus in the South is Dr. Joseph A. White of Richmond. Among the honorary fellows are Sir James Dundas-Grant and Sir St. Clair Thomson, both of London, England. Dr. Lee M. Hurd of New York City is President of the Society.

There are four Sections of the national Society and the Section meetings are usually held in January of each year. The national meeting is always held the first part of June. The Southern Section will hold its annual meeting in Columbia, S. C., on January 8th, 9th, 1940. Headquarters will be in the Jefferson Hotel.

Papers accepted for the meeting January 8th, 9th, 1940:

1. Dr. Lee Cohen, Baltimore: "The Advantage of Mixed Bone and Cartilage Grafts in the Correction of Saddle Nose and Other Depressed Deformities."
2. Dr. Charles D. Blassingame, Memphis: "Office Procedures."
3. Dr. Walter A. Wells, Washington: "Some Very Practical Considerations with Regard to Hearing Tests."
4. Dr. B. Russell Burke, Atlanta: "Laryngoscopy, with Colored Moving Pictures."
5. Dr. J. M. Northington, Charlotte, N. C.: "Relationship between Otolaryngological Practice and Practice of Internal Medicine."
6. Dr. Chevalier L. Jackson, Philadelphia: "Technic of Direct Laryngoscopy for Removal of Benign Tumors and Biopsy."
7. Dr. Murdock Equen, Atlanta: "Bronchoscopic Problems—Lantern Slides."
8. Dr. W. G. Kennon, Nashville: "Osteomata of the External Auditory Canals."
9. Dr. D. C. Jarvis, Barre, Vt.: "Applied Biochemistry in the Etiology and Treatment of Seasonal Hay Fever."
10. Dr. E. G. Gill, Roanoke: "Further Observation with Immunized Blood Transfusions in the Management of Blood Stream Infections."
11. Dr. Charles C. Jones, Cincinnati: "Acute Exudative Otitis Media."
12. Dr. Hugh A. Kuhn, Hammond: "Autogenous Vaccines and the Newer Chemicals in 1000 Cases of Otitis."
13. Dr. LeRoy M. Polvogt, (with Dr. S. J. Crowe), Baltimore: "Prevention and Treatment of Deafness in Children by Irradiation."
14. Dr. J. W. Babcock, New York City: "Effect of Sulfanilamide in the Treatment of Acute Otitis Media."
15. Dr. Stewart Nash, Rochester, N, Y.: "Medical Economics."
16. Dr. Wells P. Eagleton, Newark: "A Philosophical Review of the Advances in the Treatment of Meningitis."
17. Dr. Fletcher D. Woodward, Charlottesville: "Relationship of Asthma to Sinusitis."
18. Dr. L. M. Griffith, Asheville: "Unilateral Exophthalmos due to Sinus Disease."
19. Dr. Josiah E. Smith, Charleston: "Retropharyngeal Abscess with Reference to Abnormally Large Percentage of Adult Cases."
20. Dr. Francis B. Blackmar, Columbus: "Oral Administration of Dust Extract in Asthma and Hay Fever."
21. Dr. Edward A. Looper, Baltimore: "The Diagnosis and Treatment of Laryngeal Tuberculosis." (Illustrated by lantern slides and movies.)
22. Dr. William L. McDougall, Atlanta: Case Report: "Tempero-Sphenoidal Brain Abscess with Operation and Recovery."
23. Dr. Wm. D. Stinson, Memphis: "Epidermoid Carcinoma of the Naso-Pharynx Occurring in Two Young Brothers."
24. Dr. W. Likely Simpson, Memphis: "Surgery in Acute Sinusitis."

SESQUICENTENNIAL OF MEDICAL SOCIETY OF SOUTH CAROLINA

On December 5th Charleston doctors celebrated the 150th anniversary of the founding of the Medical Society of South Carolina. At the time of its founding things medical in South Carolina were mostly of Charleston and it has come about that this venerable society's name attaches now to the Charleston County Medical Society, while the State organization is the South Carolina Medical Association.

Dr. Nathan B. Van Etten, of New York, President-Elect of the American Medical Association, and Dr. Francis R. Packard, of Philadelphia, Editor of *Annals of Medical History,* were among the speakers at the banquet at the Francis Marion Hotel.

While repeating the desire for a Secretary of Health in the cabinet, advocated by the national association as early as 1875, Dr. Van Etten reiterated his belief that the medical profession must have complete control of the practice of medicine. He pointed to evidence that state education is already too costly for the public pocket, which in New York State absorbs 43 per cent of the State Budget. State medicine would be even more expensive, for it would care for people from birth to burial.

"A new program must provide something better and simpler than these excursions into Utopia."

"Needs for help should be discovered in the smallest political subdivision such as the school district, then referred to the township, to the county, to the state, to the federal authority in just that order and the federal authority should be called upon infrequently."

A historical sketch of the medical society was presented by Dr. James J. Ravenel, President of the organization.

Dr. Douglas Jennings, President of the South Carolina Medical Association, brought greetings, and Dr. William Weston, of Columbia, presented a tablet from the association to the society.

The Medical Association of Georgia presented the society with a picture showing the first surgical operation under ether anesthesia, that performed by Dr. Crawford W. Long at Jefferson, Ga., March 30th, 1842.

Dr. Ravenel, who presided, expressed opposition to socialized medicine. He read telegrams from many leaders, congratulating the society upon its anniversary and its work.

Speaking on the Scientific Links Between Charleston and

Philadelphia in the Eighteenth Century, Dr. Packard said the Medical Society of South Carolina, the sixth oldest in the country, and the College of Physicians in Philadelphia were founded by physicians who were imbued with the traditions of such great medical schools as Leyden and Edinburgh.

Dr. William Bull, of Charleston, was the first native American to be graduated in medicine at Leyden, receiving his degree in 1735. Dr. John Redman, the first president of the College of Physicans of Philadelphia, received his degree from Leyden in 1748.

Three great Scotch physicians—Lionel Chalmers, John Lining, Alexander Garden—practiced in Charleston after they received their education at Edinburgh, and on the continent of Europe.

The first native South Carolinian to receive his degree from Edinburgh was Dr. John Moultrie, who was graduated in 1748.

In Charleston and Philadelphia were physicians who were products of the greatest schools of the Old World. They became linked in another way, which brought about the study of zoology and botany in the South.

Through the efforts of Dr. Garden, Dr. Lining and other South Carolinians, John Bartram and his son, William, Philadelphia bontanists, visited Charleston on their botanical expeditions to South Carolina,, Georgia and Florida.

The Bartram botanical gardens in Philadelphia provided the plants which produced medicine so vitally needed in medical practice.

The Medical History Club was host at a luncheom in honor of Dr. Packard at the Fort Sumter Hotel. The luncheon was held in connection with the sesquicentennial celebration instead of as the annual founder's day luncheon.

Dr. Packard spoke on incidents in the early history of the Pennsylvania Hospital, of Philadelphia, the oldest hospital in the United States. As custodian of the records of the hospital, Dr. Packard brought with him case history books which date back as far as 1800. These included records and case histories compiled by some of the most eminent physicians of that time.

A reception for visiting physicians was held at the Gibbes Art Gallery, where pictures and books relating to the background of the medical society are on display.

GRADUATE MEDICAL ASSEMBLY, *January* 15th-18th, 1940
Biltmore Hotel, Atlanta,
Preliminary Program

Dr. Wm. J. Dieckmann, Chicago—Prevention and Treatment of Eclampsia. (Moving Picture). Prevention and Treatment of Post-partum Hemorrhage. Dr. Alexis F. Hartmann, St. Louis — Observations in Chemotherapy. Further Observations in Hypoglycemia. Dr. Philip S. Hench, Rochester—Arthritis and Other Subjects. Dr. Philip Lewin, Chicago—Orthopedics.—Low Back Pain and Related Conditions. Dr. Alfred Blalock, Nashville—Shock.—Mechanism and Treatment. Pre and Post-operative Care of Patients. Dr. Wm. E. Chamberlain, Philadelphia—Roentgenology. — Diagnostic Demonstrations. Dr. David L. Thomson, Montreal—Sex Hormones and Their Therapeutic Use. The Anterior Pituitary and Its Therapeutic Significance. Dr. Stanford W. Mulholland, Philadelphia—Problem of Renal Infections. Hypertension—Urologic factors. Dr. Cyrus C. Sturgis, Ann Arbor—Obesity.—Types and Treatment. The Iron Deficiency Anemias and Anemias of Pregnancy. The Prognosis and Treatment of Hypertension. Dr. Marion A. Blankenhorn, Cincinnati—Deficiency Diseases in Office Practice. Sulfapyridine in Pneumonia. Dr. C. B. Farrar, Toronto—Neuropsychiatry.—Common Problems in General Practice. Dr. George Heuer, New York—Surgical Treatment of Pulmonary Abscess. Treatment of Gallstone Disease and Other Subjects. Dr. Watt W. Eagle, Durham—Otolaryngology.—Sphenopalatine Neuralgia. Dr. J. E. Moore, Baltimore—Syphilitic Optic Atrophy. Unsolved Problems in Syphilis.

THE NORTH CAROLINA PATHOLOGICAL SOCIETY

Meeting was held December 12th, at Winston-Salem. Among the speakers were: Dr. W. D. Forbus, Durham; Dr. L. C. Todd, Charlotte; Dr. Kenneth Lynch, Charleston; and Dr. T. G. Frost, Winston-Salem.

THE SCHOOL OF MEDICINE OF THE UNIVERSITY OF NORTH CAROLINA, on December 4th, celebrated the opening of the new Medical Laboratories Building as a part of its general Sesquicentennial Celebration. Addresses by Dr. E. K. Marshall, Jr., of Johns Hopkins, on Medical Research, The Story of Sulfanilamide; by Dr. David Riesman, of the University of Pennsylvania, The Making of a Clinician; by Dr. G. Canby Robinson, of Johns Hopkins, The Application of Medical Science to the Individual; and by Dr. Frank G. Boudreau, of the Milbank Memorial Foundation, on New Health Frontiers were features.

GREENVILLE DOCTORS MOVE

Drs. Lonita Boggs, Charles N. Wyatt, Horace M. Whitworth, Jr. and E. O. Horger, Jr., announce the removal of their officers from the Jordan Building to 301 East Coffee Street, December 1st.

DR. J. O. FITZGERALD, JR., has been elected President of the Richmond Camera Club.

DR. J. O. MCCLELLAND, of Maxton, N. C., is the new president of the Seaboard Air Line Railway Surgeons. DR. W. R. BRACEY, of Richmond, is second vice president.

Anal-Sed

Analgesic, Sedative and Antipyretic

Affords relief in migraine, headache, sciatica and neuralgia. Rheumatic symptoms are frequently relieved by a few doses.

Description

Contains 3½ grains of Amidopyrine, ¼ grain of Caffeine Hydrobromide and 15 grains of Potassium Bromide to the teaspoonful.

Dosage

The usual dose ranges from one to two teaspoonfuls in a little water.

How Supplied

In pints and gallons to physicians and druggists.

Burwell & Dunn Company

Manufacturing *Pharmacists*
Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U.S. on request

Dr. Antonio Gentile, 36, member of the Elizabeth Buxton Hospital staff and native of Suffolk, died unexpectedly at the hospital November 20th.

Dr. Gentile was a graduate of the University of Virginia Medical School and was an interne and later assistant resident surgeon at University Hospital at Charlottesville.

The Seventh District Medical Society, met November 28th, with officers: Dr. Raymond Thompson, Charlotte, President; Dr. C. F. Glenn, Rutherfordton,, Vice-President; Dr. Chas. H. Pugh, Gastonia, Secretary; Dr. B. H. Kendall, Shelby, Councilor; Local Committee of Arrangements—Drs. H. C. Whims, C. F. Glenn and W. C. Bostic. At 2 p.m. the calll to order was made by Dr. B. H. Kendall, Councilor.

Papers:. Spontaneous Pneumothorax, Dr. H. C. Thompson, Shelby; Principles of Chemotherapy in Gonorrhea, Dr. Walter E. Daniel, Charlotte; Bacterial Endocarditis with Report of Case, Dr. C. O. Jones, Cliffside; Syphilis of the Cardio-Vascular Ssystem, Dr. H. C. Whims, District Health Officer, Rutherfordton; Spinal Anesthesia, Dr. J. C. Montgomery, Charlotte; Dystocia of Soft Parts, Dr. Brodie C. Nalle, Charlotte.

A banquet was served at the Isothemal Hotel at 7:00. Address of welcome, Mr. S. E. Elmore, Rutherfordton; response, Dr. James M. Northington, Charlotte; Remarks, Dr. Wm. Allan, Charlotte, President Medical Society of North Carolina; Address—The Present Status of the Tuberculosis Situation in the Southern States, Dr. Paul H. Ringer, Asheville.

New officers are: Dr. C. F. Glenn, Rutherfordton, President; Dr. N. B. Lubchenko, Harrisburg, Vice-President; Dr. H. C. Thompson, Shelby, Sec.-Treas.

Buncombe County Medical Society

The 18th meeting of the year called to order by Vice-Pres. A. B. Craddock, at the City Hall, October 16th, 38 members present.

Dr. J. T. Sullivan, presented in detail a case history of a 9-year-old boy suffering a rupture of the liver, laceration of the diaphragm, and pain reflected from the left chest. Dr. T. R. Huffines, reported on the Value of Nephrectomy in case of Pyelonephritis for the relief of Hypertension, he discussed two cases in his own practice. The two papers discussed by Dr. Walter Johnson.

Dr. R. A. White moved that the president appoint a committee with power to act to arrange for the annual banquet. Passed.

Dr. Hollyday moved that the president appoint a nominating committee for 1940 officers.

Dr. Schaffle, then presented a plea for articles for the Bulletin, his plea was discussed by several of the members.

The 19th meeting was called to order at 8 p.m. at the City Hall, by President Griffin, 61 members present.

Mr. Clarence Walker, presented the idea of the Chamber of Commerce relative to the physicians assisting in obtaining medical conventions for the city.

President Griffin, turned the program over to the members who were to present a Symposium on Sulfanilamide and Sulfapyridine. The introductory remarks were made by Dr. Kutscher. Dr. John Young, with the assistance of slides, presented original work on the use of Sulfanilamide and its allied compounds in the treatment of gonorrhea in the male and female. Dr. Wilson Pendleton reviewed Drs. Bliss and Long's new book on these two drugs. Dr. J. LaB. Ward, presented the subject from the viewpoint of the pediatrician by reporting a number of case histories. The subject was continued by Drs. Kutscher, Williams, Huffines, L. M. Griffith, Griffin, Pate of Canton and John Brownsberger.

Dr. Murphy moved, seconded by Dr. Ringer, that the Medical Economics Committee consider the plan suggested by the Hospital Care Association relative to insurance for surgery and obstetric cases, this motion was passed.

Dr. Blumberg moved that the P. H. & L. Committee look into the rumors being circulated in and around the city regarding the recent case of hydrophobia and that this committee be instructed to report their findings at the next meeting. Seconded by L. M. Griffith, passed.

Dr. C. J. Chapman was elected into membership from Montour County, Pa.

—G. W. KUTSCHER, JR., Secretary.

Mecklenburg County Medical Society

At the meeting held December 5th, Dr. Robert Thrift Ferguson was elected President; Dr. T. C. Bost, First Vice-President; Dr. Andrew Blair, Second Vice-President; Dr. Thomas Baker Secretary-Treasurer.

Dr. Sargeant D. Pepper of Philadelphia, Pa., a member of the medical staff of the University of Pennsylvania, guest speaker, read a paper on Treatment of Pneumonia with Sulfapyridine.

OUR MEDICAL SCHOOLS

Duke

On October 14th Dr. Marvin A. Stevens, of the Yale University School of Medicine, held a clinic on athletic injuries.

From October 19th-21st the Annual Post-Graduate Symposium on Diseases of the Lungs and Thorax was held in which the following participated: Dr. Edward D. Churchill, Dr. Frederick T. Lord and Dr. Maxwell Finland, of the Harvard Medical School; Dr. Daniel M. Brumfiel, of Trudeau Tuberculosis School, Saranac Lake, N. Y.; Dr. Chester A. Stewart, of the University of Minnesota School of Medicine; Dr. Edward N. Packard, of the New York State Hospital for Incipient Tuberculosis, Ray Brook, N. Y.; Dr. Cameron Haight, of the University of Michigan; Dr. William DeW. Andrus, of Cornell University; Dr. Isaac A. Bigger, of the Medical College of Virginia; Dr. Charles R. Austrian and Dr. William F. Rienhoff, of The Johns Hopkins University School of Medicine; Dr. Dickinson W. Richards, Jr., of Columbia University College of Physicians and Surgeons; Dr. Stuart W. Harrington, of Mayo Clinic; Dr. Daniel C. Elkin, of Emory University School of Medicine, and Dr. Gabriel Tucker, of the University of Pennsylvania School of Medicine.

On October 21st the Baltimore-Washington Dermatological Society met at Duke Hospital.

On October 25th Dr. William Allan, President of the North Carolina Medical Society gave an illustrated lecture on Heredity and Disease.

On November 14th Dr. Harvey B. Stone, Associate Professor of Surgery of The Johns Hopkins University School of Medicine, held a surgical clinic.

University of Virginia

At the meeting of the University of Virginia Medical Society on October 23rd, Dr. Eugene M. Landis spoke on the subject of Kidney Extracts and Hypertension.

Dr. J. Edwin Wood read a paper before the meeting of the Augusta Medical Society in Waynesboro on November 1st on the subject of Common Drugs Used in Cardiorenal Diseases.

The twenty-fourth Post-Graduate Clinic sponsored by the University Medical School and the Division of Extension was held on November 3rd with the following program: The Modern Treatment of Gonorrhea by Dr. Samuel A. Vest. The Neuro-Surgical Aspects of Low Back Pain and Sciatica by Dr. John M. Meredith; An Evaluation of Vaccines and Sera in Prophylaxis and Treatment by Dr. George M. Lawson; Changes in Radiation Therapy by Dr. Vincent Archer and George Cooper; A symposium on Hypertension: Experimental Hypertension by Dr. Alfred Chanutin, Pathological Physiology of Human Hypertension by Dr. Eugene M. Landis, and The Treatment of Human Hypertension by Dr. J. Edwin Wood. The Clinic was attended by sixty-seven physicians.

On November 3rd, Dr. Adolph Meyer, Professor of Psychiatry at the Johns Hopkins University, delivered an address on the occasion of the dedication of the John Staige Davis Neuro-Psychiatric Wards. He spoke on the subject of The Person in Medical Practice and Teaching.

On November 6th, Dr. W. W. Waddell spoke before the Roanoke Academy of Medicine on the Role of Vitamin K in the Etiology, Prevention and Treatment of Hemorrhage in the Neonatal Period. Dr. Eugene M. Landis spoke on the subject of Hypertension.

At the meeting of the University of Virginia Medical Society on November 13th, Dr. W. W. Waddell spoke on the subject of the Role of Vitamin K in the Etiology, Prevention and Treatment of Hemorrhage in the Newly Born.

Medical College of Virginia

Dr. C. L. Outland, Associate Professor of Preventive Medicine, has been elected President of the American School Health Association.

Dr. Porter P. Vinson, Professor of Bronchoscopy, Esophagoscopy and Gastroscopy, has been elected first Vice President of the Alumni Association of the Mayo Foundation.

Dr. G. H. Ghermann, Medical Director of the E. I. DuPont de Nemours Company, and Dr. John H. Foulger, Director of the Haskell Laboratory of Industrial Toxicology of the duPont Company, have been appointed Associate Professors of Industrial Health here. Dr. W. L. Weaver of the duPont plant at Ampthill has been appointed Instructor in Industrial Health. The appointments are a part of a program for the expansion of the college's course in industrial health.

Armistice Day exercises were held in Monumental Church at noon November 11th. Dr. W. Lowndes Peple and Dr. Vincent Franks spoke briefly. This program is held each year jointly with the veterans of Base Hospital 45 (McGuire) Unit. Doctor Peple was chief of the surgical service in this unit and Dr. Stuart McGuire was head of the unit. Doctor McGuire was also present for these exercises.

The enrollment for the session is 695: 303 in medicine, 139 in dentistry, 112 in pharmacy and 141 in nursing.

The annual Stuart McGuire lectures are scheduled for April 16th and 17th, 1940. Dr. C. Frederic Fluhmann, Associate Professor of Obstetrics at Leland Stanford University, will give two lectures, one on Anesthesia and Analgesia in Obstetrics and a second on The Problem of Abnormal Uterine Bleeding.

Dr. Lewis E. Jarrett, Director of the Hospital Division, attended the Annual Meeting of the American College of Surgeons in Philadelphia, participating in the discussion of several papers presented at the meeting.

Dr. Fritz von Gutfeld has been appointed Associate in Bacteriology and has reported for duty.

MARRIED

Dr. Frederick Thorns Craven, of Concord, and Miss Martha Louise Kindel, of Raleigh, were married on November 22nd.

DEATHS

Dr. Manly Blevins, one of the oldest and most widely-known physicians in Western North Carolina, died December 9th, at the age of 80. Born and reared is Ashe county, he had been practicing medicine in this mountain section for nearly 65 years. He was a son of Dr. and Mrs. Daniel Blevins and as a young boy practiced with his father and later with the late Dr. J. O. Wilcox.

Intractable Abdominal Pain With Backache

(O. C. Hudson, Hempstead, N. Y., in *Med Times*, Nov.)

Intractable abdominal pain with a backache an intractable intercostal neuralgia may be the diagnosis. Injection of novocain as a therapeutic test is advised paravertebrally. Later repeated injections, novocain alone, novocain followed by alcohol, or resection of the sympathetic ganglion, are suggested as promoting a cure.

At present these people are thrown aside as neurotics, fakers, or as drug addicts. They do not receive the sympathy and encouragement their pitable state demands.

There are no known substances that can be safely used to produce an adequate and sufficiently persistent dilatation (of these diseased peripheral vessels). There is no known remedy of this kind so persistently potent as warming of the body, and this is simple, economical and safe. —Sir Thomas Lewis.

INHALANT No. 77

An Ephedrine Compound used as an inhalant and spray, in infections, congested and irritated conditions of the nose and throat. Relieves pain and congestion, preventing infection, and promotes sinus ventilation and drainage without irritation.

Description

Inhalant No. 77 contains Ephedrine, Menthol, and essentials oils in a Paraffin oil.

Application

Can be sprayed or dropped into the nose as directed by the Physician.

Supplied

In 1 ounce, 4 ounce and 16 ounce bottles.

Burwell & Dunn Company

Manufacturing *Pharmacists*

Established *in 1887*

CHARLOTTE, N. C.

Sample sent to any physician in the U. S. on request.

BOOKS

THE ESSENTIALS OF APPLIED MEDICAL LABORATORY TECHNIC, with details of How to Build and Conduct a Laboratory in Hospital or Office at Small Cost, by J. M. Feder, M. D., Director of Laboratories and of The Allergy Clinic, Anderson County Hospital, Anderson, S. C., Profusely Illustrated, Two Plates in Colors. *Charlotte Medical Press*, Charlotte, N. C. $5.00

More diagnoses are missed, more cases misdiagnosed, because of lack of adequate laboratory help, than for any other reason. Much of this lack is occasioned by considerations of cost of installation and operation. There is a very general idea that laboratory equipment is very costly and the work very complicated. Dr. Feder's book tells in detail how satisfactory substitutes for the costly articles of equipment may be provided for a few dollars or cents; and it teaches that many of the most valuable diagnostic procedures require only a small expenditure of time and care, and that a satisfactory clinical laboratory may be installed and conducted in a space no greater than that of a good closet.

This book is hailed as an answer to the need of the majority of doctors for information on how to give all their patients who need such service the benefits of laboratory service, without putting on a great number of these patients an unbearable load of cost.

ENDOCRINE GYNECOLOGY, by E. C. Hamblen, B. S., M. D., F. A. C. S., Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine; Gynecologist in Charge of the Endocrine Division and Sex-Endocrine Clinic, Duke University Hospital, Durham, N. C., foreword by J. B. Collip, M. D., Gilman Cheney Professor of Biochemistry and Pathological Chemistry, McGill University, Montreal. *Charles C. Thomas*, Springfield, Ill. and Baltimore. 1939. $5.50.

The difficutly—the often impossibility—of translating the results of laboratory investigation to clinical application are recognized. Dr. Hamblen is conservative in his statement of what may be accomplished in this field. He is anxious not to make claims that can not be substantiated, discredit the use of endocrine products and so set back the hands of the clock

The book represents an attempt to sift out the best on this subject and present it in concise form for all doctors who have women for patients, and a good job he has made of it.

THE MERCK INDEX: Fifth Edition: An Encyclopedia for the Chemist, Pharmacist, Physician, Dentist and Veterinarian. Containing useful scientific data and other information on the physical, chemical and medical properties, as well as the various uses, of chemicals and drugs; also more than 4500 chemical, clinico-chemical reactions, tests and reagents; formulas for preparation of culture media, fixatives and staining solutions; useful tables; antidotes for poisons; literature references. Compiled and published by *Merck & Co. Inc.* Rahway, New Jersey. 1940. $3.00.

The claims made by the publishers for this index are amply justified.

From the first edition, published fifty years ago, to the present volume, Merck's Index has served a valuable purpose to those whose work lies in Chemistry, Pharmacy and Medicine.

New sections in the 1940 edition: Chemical, Clinico-Chemical Reactions, Tests and Reagents by Author's Name—350 pages; and Culture Media, Fixatives and Staining Solutions.

ATLAS OF SURGICAL OPERATIONS, by Elliott C. Cutler, Mosley Professor of Surgery, Harard University and Chief Surgeon of the Peter Bent Brigham Hospital; Formerly Professor of Surgery, Western Reserve University, and Director of Surgery of the Lakeside Hospital; and Robert Zollinger, Assistant Professor of Surgery, Harvard University and Senior Assiciate in Surgery at the Peter Bent Brigham Hospital. Illustrated by Mildred B. Codding. The *Macmillian Company*, New York. 1939. $8.00.

Under *A* General Considerations—

Chapter heads are: 1. Surgical Technique 2. Anesthesia 3. Preoperative and Postoperative Care.

Then come *B* Surgical Operations—of the neck, of the chest, of the abdominal wall, of the gastro-intestinal system, of the spleen, of the gynecological system, of the extremities.

The telling of the details of the great variety of operations is nothing short of marvelous.

Any surgeon can improve his surgery by the aid to be had from this atlas; and it will not be so hard on his patients.

FOR

PAIN

The majority of the physicians in the Carolinas are prescribing our new tablets

A AND S 751

Analgesic and Sedative 7 parts Aspirin 5 parts Phenacetin 1 part Caffein

We will mail professional samples regularly with our compliments if you desire them. Carolina Pharmaceutical Co., Clinton, S. C.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE ESOPHAGUS, by PORTER P. VINSON, B.S., M.D., D.Sc., F.A.C.P., Professor of Bronchoscopy and Esophagoscopy, Medical College of Virginia, Richmond. *Charles C. Thomas Company*, Springfield, Ill and Baltimore, Md. $4.00.

The importance of the careful history and general examination is emphasized. We are reminded that much satisfactory diagnosis and treatment of esophageal disease conditions was done before x-rays and the esophagoscope. This foretells a balanced, rational dealing with this important subject. The texture of the esophagus, the difficulty of getting at it through cutting and the necessity for maintaining its length have caused the surgeon to go warily here, and given a joyous welcome to the esophagoscope and its user.

TUMORS OF THE HANDS AND FEET, edited by GEORGE T. PACK, M.D., F.A.C.S., New York, Assistant Professor of Surgery, Yale University School of Medicine, and Cornell University College of Medicine, St. Louis. The *C. V. Mosby Company*, $3.00.

We think often of tumors of the breast, of the uterus, of the liver, of the brain—even of the skin; but who thinks of tumors of the hands and feet? Evidently this is a neglected subject. That is, it was a neglected subject. Now that this monograph is out it can be said no longer.

PROCTOSCOPIC EXAMINATION AND DIAGNOSIS AND TREATMENT OF DIARRHEA. by M. H. STREICHER, M.S., M.D., Assistant Professor of Medicine, University of Illinois, College of Medicine, Research and Educational Hospital and Department of Surgery, Grant Hospital of Chicago. *Charles C. Thomas*, Springfield, Ill. and Baltimore, Md. 1940. $3.00.

This book is written with the needs in view of the nurse, the medical student, the interne, the proctologist, the surgeon and the general practitioner. The old textbooks on Medicine had much under the caption Diarrhoea. In our zeal for getting away from symptomatology to pathology, we have leaned too far backward. Cough, itching, nausea, pain, hiccough, sneezing and a lot more symptoms deserve much more consideration than is commonly given them under the new dispensation. And so it is with diarrhea, with and without the *s*.

Many patients come seeking that diarrhea be stopped. This book gives an understanding, helpful discussion of the problem.

GYNECOLOGIC OPERATIONS AND THEIR TOPOGRAPHIC-ANATOMIC FUNDAMENTALS, by Prof. Dr. MED. HENRICH MARTIUS, Director of the University Women's Clinic, Gottingen; authorized English Translation under the editorial supervision of W. A. Newman Dorland, A.M., M.D., F.A.C.S., Formerly Professor of Obstetrics, Loyola University School of Medicine, Diplomate of the American Board of Obstetrics and Gynecology, etc.; with 404, mostly colored, illustrations. *S. B. Debour*, Chicago. 1939. $10.00.

The author's preface declares that his effort was directed not only to show specialists the manner of gynecologic surgery as practiced in the Göttingen Women's Clinic, but also to afford students an insight into its types and fundamentals. The anatomy being described in connection with the various operative procedures is a useful arrangement. There are chapters an (1) Gynecologic Laparatomies, (2) Vaginal Operations, (3) Operations for Urinary Incontinence, (4) Curettage of the Uterus, (5) Herniotomies, (6) Intestinal Operations. From these heads it may be seen that the scope is broad, yet it is properly embraced within the title. A clear exposition of the anatomy and function of the different structures, of their relative importance in the restorations and of their healing powers is woven into the descriptions of the operative procedures, and the profusion of well executed illustrations combine to make this an exceedingly valuable text in this important field.

ANESTHESIA: Narcosis; Local; Regional; Spinal, by A. M. DOGLIOTTI, M.D., Professor of Surgery, University of Modeno; authorized English Translation by Carlo S. Scuderi, M.S., M.D., F.A.C.S., Associate in Surgery, University of Illinois, College of Medicine; 17 tables and

236 illustrations partly in colors. *S. B. DeBour,* Chicago. 1939. $7.50.

The author has been more than once invited to contribute to the program of the International Congress of Anesthesia. As is said in the foreword, the book is complete, clear and well-balanced. It's a far cry from the day when anybody—referring doctor, untrained nurse, orderly, granny or miscellaneous by-stander—was cheerfully assigned the post of anesthetist.

The developments in this new specialty have been rapid and startling. Much of the great volume of work is just being appraised. This book contains such appraisal. Here the doctor who is an anesthetist daily or occasionally may find authoritative information on anesthetics and anesthesia.

CANCER OF THE LARYNX: By Chevalier Jackson, M. D., Sc. D., LL. D., F. A. C. S., Honorary Professor of Broncho-Esophagology and Consultant in Broncho-Esophagologic Research, Temple University Medical School, Philadelphia; and Chevalier L. Jackson, A. B., M. D., M. Sc. (Med.), F. A. C. S., Professor of Broncho-Esophagology; Temple University Medical School, Philadelphia. 309 pages with 189 illustrations on 116 figures, and 5 plates in colors, containing 50 illustrations. *W. B. Saunders Company,* Philadelphia and London. 1939. Cloth, $8.00.

The whole work is predicated on the first sentence, which tells us that cancer of the larynx is curable in 80% of the cases if the diagnosis is made early, almost not at all when the diagnosis is made late; and persistent or intermittent hoarseness in an adult means Cancer until it is proven otherwise. These are its salient teachings. Also, it teaches how to make the diagnosis and how to manage the case. The Jacksons enjoy a position of unquestioned leadership in this field, a position won by priority and sustained merit.

On the basis of population ratio there are 35 times more Negroes than whites that reach the age of 100.—*W. S. Horn,* Ft. Worth, Texas, in *Jl. Kan. Med. Soc.,* Sept.

—I have been unwilling either thoughtlessly to believe the new or pertinaciously to defend the old, believing the saying trite of those who proclaim that they prefer to err with the ancients, rather than profess the truth with the moderns; for this is the part neither of a wise nor a good nor of a loyal physician.—Wepfer, 1685, Translation by John E. Donley.

CHUCKLES

"A flirt, am I?" exclaimed Mary Ann, under notice to go. "Well, I knows them as flirts more than I do, and with less excuse." She shot a spiteful look at her mistress, and added, "I'm better looking than you. More handsome. How do I know? Your husband told me so."

"That will do," said her mistress, frigidly.

"But I ain't finished yet!" retorted Mary Ann. "I can give a better kiss than you! Want to know who told me that?"

"If you mean to suggest that my husband—"

"No, it wasn't your husband this time," said Mary Ann. "It was your chauffeur."

"That baby tonic you advertise—" she began, "does it really make babies bigger and stronger?"

"We sell lots of it" replied the druggist "and we've never had a complaint."

"Well, I'll take a bottle," and went out. In five minutes she was back. She got the druggist into a corner and whispered into his ear: "I forgot to ask about this baby tonic," she said under her breath. "Who takes it—me or my husband?"—Phoenix *Flame.*

One of the owners of a small store that had been burned met a friend.

"I am ruined, I am ruined; I just stood there helpless, I and my partner, watching it burn. His face got white, white, white—white as your shirt." Then, looking at his friend's shirt, he added: "Whiter."

The expected telegram said:

"Isaiah 9:6."

Recipient, not familiar with the Scriptures, to her husband:

"Margaret evidently has a boy who weighs 9 pounds and 6 ounces, but why on earth did they name him Isaiah?"—*The Congregationalist.*

An American film actress was applying for a pass port

"Unmarried?" asked the clerk.

"Occasionally," with a pat of her hair.—Montreal *Star.*

"I don't like the looks of that codfish."

"Well, if you want looks, why don't you go in for gold codfish.

Prospective Purchaser—"I'm afraid your make of car does not suit us. My fiancee can not reach the brakes and the steering-wheel at the same time."

Salesman—"But, sir, the car is perfect. Why not try a new girl?"—*Tit-Bits.*

A multi-millionaire, advancing in years, invited his sons, daughters and in-laws to his home for a Thanksgiving dinner.

"Children," he said, "I'm getting along in years and none of you has presented me with a grandchild. I've decided to give a million dollars to the first one who presents me with a grandchild."

With that he bowed his head and said a grace. Upon looking up he found that the table was deserted.

Parents who tell their children that spinach will give them strength should tell them the rest of it—that it will also give them grit.—Norfolk *Virginian-Pilot.*

"Where can I get a license?"

"A hunting license?"

"No, the hunting is over. I want a license to marry the girl I've caught."—Boston *Transcript.*

"My husband just ran off with another woman. Oh, I just c-can't control myself!"

"You mustn't try, dearie. You'll feel better after a good laugh."—*Life.*

Judge (in dentist chair)—"Do you swear that you will pull the tooth, the whole tooth, and nothing but the tooth?"—Boston *Transcript.*

INDEX 1939

ADDRESSES, ORIGINAL ARTICLES AND CASE REPORTS

Abdominal Tumors in Children, *Louis Platt* 486
Address of the Presiding Officer to the Annual Meeting of the Tri-State Medical Association of the Carolinas and Virginia, *C. A. Hensley* 108
Adrenalin in Spastic Conditions Due to Autonomic Nervous System Imbalance, Therapeutic Use of, *J. T. Wolfe* 169
Allergic Patient, The, *Wilson Pendleton* 155
Amebiasis, Diverticulitis and Cancer of the Colon, Surgical Complications of, *A. G. Brenizer* 54
Anemia, Erythroblastic, *C. W. Styron* 316
Angiomata of Striated Muscle, *R. H. Owen* 364
Basal Metabolism in Hyperthyroidism, The Value of, *W. F. Martin* 276
Biliary Tract, Surgery of the, *F. S. Johns* 303
Bismuth Violet, Malaria and Its Treatment With, *C. E. Watson* 431
Blood Bank, The Management of a, *C. S. White & J. J. Weinstein* 479
Brain Injuries in General Surgery, *D. B. Koonce* 164
Calcification of Cystadenoma of the Thyroid, *Chas. Bunch* 59
Capitalistic Medicine, An Experiment in, *Mary F. Shuford* 69
Cardiac Complications of Funnel Breast, The, *J. M. Hutcheson* 266
Chemical Fertilizers, The Relation of, to Health, *H. W. Knight* 221
Chorioepithelioma of the Uterus, *R. T. Ferguson* 223
Colon, Surgical Complications of Amebiasis, Diverticulitis and Cancer of the, *A. G. Brenizer* 54
Colon, Surgical Diseases of the, *F. K. Boland* 51
Commonwealth, Sound Health For Our, *R. F. Roberts* 117
Compensation Law, The North Carolina, *J. W. Davis* 1
Congress on Obstetrics and Gynecology, High Lights on the First American, *O. H. Jones* 551
Constitutional Medicine, *R. S. Crispell* 255
Continuous Drip Treatment of Peptic Ulcer, The, *T. N. Barnett* 310
Country Doctor, Recollections of a, *M. O. Burke* 215
Crowell Clinic's Experience With Ureteral Stone, *C. B. Squires* 482
Cystadenoma of the Tyyroid, *Chas. Bunch* 59
Diabetes and the Use of Protamine Insulin, *Robert Wilson, Jr.* 587
Diabetes Mellitus. Pathogenesis and Certain Other Factors, *P. F. Whitaker & K. P. Turrentine* 596
Effects of Mental Handicaps Upon Self-reliance and How to Overcome Them, *O. B. Darden* 424
Endocarditis, Subacute Bacterial, *C. O. Jones* 602
Epilepsy From the Neurological Standpoint, *J. G. Lyerly* 415
Erythroblastic Anemia, *C. W. Styron* 316
Estrone Preparations, Treatment of Menopausal Symptoms With, *Irma Henderson-Smathers* 62
Experiment in Capitalistic Medicine, An, *Mary F. Shuford* 69
Eye, Ear and Throat Practice in Europe, Recent Observations on, *J. A. Pilcher* 153
Femur, The Treatment of Fractures of the Neck of the, *J. W. Davis* 529
Fertilizers to Health, The Relation of Chemical, *H. W. Knight* 221
Fifty Years of Medicine, *Wm. H. Cobb* 261
Food Disorders, Common Functional, *J. T. Saunders* 273
Foreign Body, A Complicated Intestinal, *Douglas Jennings & W. C. Hunsucker* 173
Fractures of the Neck of the Femur, The Treatment of, *J. W. Davis* 529
Functional Disturbances of the Genital System, *W. M. Rowlett* 427
Funnel Breast, The Cardiac Complications of, *J. M. Hutcheson* 266
Genital System, Functional Disturbances of the, *W. M. Rowlett* 427
Glaucoma—Gouty Eye, *G. M. Billings* 57
Health For Our Commonwealth, Sound, *R. F. Roberts* 117
Helminths in Orange County, North Carolina, A Survey of Intestinal, *H. W. Brown & A. J. Sheldon* 380
Hemoglobin Determinations, *C. E. Royce* 548
Hemolytic Jaundice, *A. G. Brenizer* 199
Hernia in Old People, Strangulated, *Paul McBee* 372
Hernia in Women, Inguinal, *W. F. Martin* 4
Hernia, Some Newer Concepts of Inguinal, *W. C. Hunsucker & Douglas Jennings* 313
Hookworm Among College Men, *E. S. Fox, J. J. Q. Simmons* 544
Hyperthyroidism, The Value of Basal Metabolism in, A Review, *W. F. Martin* 276
Hysterectomies With Indications and Results, 100, *R. T. Ferguson* 10
Ileum With Late Developing Symptoms, Traumatic Rupture of Mesentery and Gangrere of, *Wm. S. Cornell* 19
Inguinal Hernia in Women, *W. F. Martin* 4
Inguinal Hernia, Some Newer Concepts of, *W. C. Hunsucker & Douglas Jennings* 313

Intestinal Foreign Body, A Complicated, *Douglas Jennings & W. C. Hunsucker* 173
Intussusception, Acute, *W. E. Miller* 369
Jaundice, Hemolytic, *A. G. Brenizer* 199
Joe, *W. T. Parrott* 605
Law, The North Carolina Compensation, *J. W. Davis* 1
Liver Abscess, *W. F. Martin* 66
Liver Extracts in the Uremic Coma of the Aged, Encouraging Results From the Use of, *C. M. Gilmore* 161
Lymphocytic Meningitis, An Epidemic of Benign, *A. A. Kent, Jr.* 374
Malaria and Its Treatment With Bismuth Violet, *C. E. Watson* 431
Medicine, An Experiment in Capitalistic, *Mary F. Shuford* 69
Medicine, Constitutional, *R. S. Crispell* 255
Medicine, Fifty Years of, *Wm. H. Cobb* 261
Meningitis, An Epidemic of Benign Lymphocytic, *A. A. Kent, Jr* 374
Meningococcus Septicemia, Chronic, *E. B. Craven, Jr.* 367
Menopausal Symptoms With Estrone Preparations, Treatment of, *Irma Henderson-Smathers* 62
Mental Handicaps Upon Self-reliance and How to Overcome Them, Effects of, *O. B. Darden* 424
Mesentery and Gangrene of Ileum With Late Developing Symptoms, Traumatic Rupture, *Wm. E. Cornell* 19
Myelography, Spinal, *R. H. Lafferty & O. D. Baxter* 323
Neufeld Technic for the Rapid Typing of Pneumococci: a Combination Mucus Solvent-Stain and a New Type of Serum Dropping Vial, A Modified, *J. M. Feder* 126
Nicotinic Acid, Discussion of Presentation on, *O. B. Darden & B. R. Tucker* 355
Obstetrics and Gynecology, High Lights of the First American Congress on, *O. H. Jones* 531
Occiput Posterior, The Problem of, *J. D. Guess & R. M. Dacus, Jr.* 420
Ovarian Tumors, *E. R. Pund* 536
Peptic Ulcer—Comparison With Older Methods, The Continuous Drip Treatment of, *T. N. Barnett* 310
Peritonitis, Cause of Death in, *F. M. Dula* 419
Peritonitis, Review of Recent Literature on Sulfanilamide, With Report on Its Use in, *E. J. Cathell* 7
Pneumonia—Home Treatment, *Harold Glascock, Jr.* 269
Pneumonia, Sulfapyridine in the Treatment of Lobar, *Wm. H. Kelley & J. W. Regan* 357
Pneumonia—Treatment Without Serum in the Family of Low Income, *R. C. Miller* 271
Polydactylism, *Charles Bunch* 604
Problem in Everyday Practice, A Very Real, *C. A. Hensley* 103
Pulmonary Infections and Their Systemic Influence, Chronic, *J. C. Meakins* 103
Pyelitis of Pregnancy, *N. O. Benson* 320
Recollections of a Country Doctor, *M. O. Burke* 215
Rectal Strictures, Benign and Malignant, *H. J. Warthen* 158
Self-reliance, Effects of Mental Handicaps Upon, *O. B. Darden* 424
Septicemia, Chronic Meningococcus, *E. B. Craven, Jr.* 367
Socialized Medicine, A Plea For, *Karl Schaffle* 110
Sound Health For Our Commonwealth, *R. F. Roberts* 117
Spastic Conditions Due to Autonomic Nervous System Imbalance, Use of Adrenalin in, *J. T. Wolfe* 169
Spinal Myelography, *R. H. Lafferty & O. D. Baxter* 323
Stored Blood For Transfusion, *F. E. Kredel* 307
Strangulated Hernia in Old People, *Paul McBee* 372
Strictures, Benign and Malignant, Rectal, *H. J. Warthen* 158
Sulfanilamide, Review of Recent Literature on, *E. J. Cathell* 7
Sulfanilamide, Sulfanilyl-Sulfanilamide and Sulfapyridine, *W. E. Daniel* 542
Sulfapyridine in Lobar Pneumonia *W. H. Kelly & J. W. Regan* 357
Surgical Complications of Amebiasis, Diverticulitis and Cancer of the Colon, *A. G. Brenizer* 54
Surgical Diseases of the Colon, *F. K. Boland* 51
Syphilis of the Cardiovascular System, *H. C. Whims* 599
Thoracic Surgery, The Management of Some Problems of, *F. P. Coleman* 473
Thyroid, Calcification of Cystadenoma of the, *Chas. Bunch* 59
Thyroid Gland Malignancy and Allied Disorders in the Negro, *E. J. Loski* 592
Thyroid Gland, A Review of 200 Consecutive Operations Upon the, *W. H. Prioleau* 207
Thyroid Gland, Pointers in Diseases of the, *W. F. Martin* 377
Transfusion, Stored Blood For, *F. E. Kredel* 307
Traumatic Rupture of Mesentery and Gangrene of Ileum With Late Developing Symptoms, *W. S. Cornell* 19
Tri-State Medical Association of the Carolinas and Virginia, Address of the Presiding Officer to the Annual Meeting of the, *C. A. Hensley* 103
Tuberculosis Clinic, *A. L. Ormand* 12
Tuberculosis Fads, Fallacies and Facts, *John Donnelly* 210
Tumors in Children, Abnormal, *Louis Platt* 486

Typing of Pneumococci, Introducing a Combination Mucus Solvent-Stain and New Type of Serum Dropping Vial, A Modified Technic For the Rapid. *J. M. Feder* ... 126
Uremic Coma of the Aged, Encouraging Results From the Use of Liver Extracts in the, *C. M. Gilmore* ... 161
Ureteral Stone, The Crowell Clinic's Experience With, *C. B. Squires* ... 482
Urinary Tract Disorders in General Practice, Upper, *H. J. Jewett* ... 122
Uritone, 34 Cases of Urticaria Cured by, *T. R. Littlejohn* ... 463
Urticaria Cured by Uritone, 34 Cases, *T. R. Littlejohn* ... 463
Uterine Prolapse and Associated Benign Pathology, The Surgical Management of, *E. R. Richardson* ... 360
Uterus, Chorioepithelioma of the, *R. T. Ferguson* ... 223
Uterus, Rupture of the, *R. L. Pearse & G. H. Derieux* ... 546

EDITORIALS

(Unsigned Editorials are by the Editor)

Accepting Serological Tests As Infallible Dangerous in Many Ways ... 343
Again: Doctors Need Not Fear ... 517
Against Emulating Those Who Are Not Doing As Well As We Are ... 142
Allan, President ... 247
Appreciation of Dr. Feder's Contribution, In ... 146
Ashworth, Doctor Walter Clark, *C. M. Gilmore* ... 44
Basic Science Law For Us, For A ... 345
Campaign Against Tuberculosis With the Family Doctor As the Central Figure, For a Definite ... 246
Curability, On ... 465
DesPortes Invites Us, President ... 146
Emulating Those Who Are Not Doing As Well As We Are, Against ... 142
Eyes, Proper Care For ... 247
Fear, Again; Doctors Need Not ... 517
Feder's Contribution, In Appreciation of Dr. ... 146
General Practice, A Month of ... 625
General Practitioner the Goat Under Socialized Medicine, The ... 571
Heart Pain: Dr. Ivan P. Battle to Dr. W. B. Kinlaw ... 404
Highsmith, Dr. Jacob Franklin ... 345
Highsmith, Doctor James DaCosta ... 572
Lucas, Dr. Chas. DeForest, *O. D. Baxter* ... 248
Medicine, Christmas Preventive ... 624
Meeting of the Medical Society of the State of North Carolina, The Frst Out-of-the State ... 190
Meeting of the South Carolina Medical Association ... 146
Meeting of the Southern Medical Association, The Coming ... 518
Meeting, Planning Next Tri-State ... 344
Meeting, Preparation For the Tri-State ... 42
Membership, To The Tri-State Medical Association ... 191
Miracle, Secretary Long Accomplishes ... 192
On Curability ... 465
Pain: Heart, Dr. Ivan P. Battle to Dr. W. B. Kinlaw ... 404
Pellagra, Peanuts to Prevent ... 191
Piedmont Post Graduate Medical Assembly ... 465
Plan As to Tuberculosis, A Definite ... 43
Planning Next Tri-State Meeting ... 344
Poliomyelitis, Keep Children At Home and Keep Them From Having ... 299
Potter, The (Poem), *Henrietta Winfrey* ... 465
Preparations For the Tri-State Meeting ... 42
President Allan ... 247
Preventive Medicine and Surgery; Let's Redouble Our Efforts in ... 403
Psychotherapy Without Quackery ... 145
Ross, Dr. John K., *R. L. Gibbon & O. B. Ross* ... 192
Secretary Long Accomplishes Miracle ... 190
Silicosis ... 572
Slanders on Surgeons ... 144
Smallpox, The Best Way to Prevent ... 627
Socialized Medicine, The General Practitioner the Goat Under ... 571
South Carolina Medical Association ... 146
Southern Medical Association, The Coming Meeting of the ... 518
Testing the Urine for Sugar Usually Adequate ... 627
Timmerman, Dr. W. Price ... 44
Transactions Are Dead: Long Live the Journal ... 298
Tri-State Medical Association Membership, To the ... 191
Tri-State Meeting in February, The ... 624
Tri-State Meeting Planning Next ... 344

Tri-State Meeting, Preparations For The 42
Tuberculosis, A Definite Plan As to 43
Tuberculosis With the Family Doctor As the Central Figure, For a Definite Campaign Against 246
Vaccinations—For Adults As Well As Children 464
Vitamin Deficiencies, Some 96
Wake Forest to Have Complete School of Medicine 404
Why Don't They? 299
Worminess 146
Wounds, Everyday 626

CLINICS

Anemia, Primary Pernicious, *P. F. Whitaker* 130
Adenoma, Recurrent Pituitary, *F. R. Taylor* 73
Arachnidism, *F. R. Taylor* 17
Brain Injury, Personality Changes Following, *F. R. Taylor* 383
Carcinoma of (1) Right Antrum, of (2) Pancreas, With Metastases to Liver, (3) Medullary, of Thyroid, *F. R. Taylor* 227
Cerebral Hemorrhage, Thrombosis and Embolism, *F. R. Taylor* 497
Gallbladder Disease and Indigestion, *P. F. Whitaker* 326
Herpes Zoster: Thrombosis in Left Side of Cerebellum, *F. R. Taylor* 280
Hypothroidism, *P. F. Whitaker* 18
Influenza, *F. R. Taylor* 73
Pernicious Anemia, Primary, *P. F. Whitaker* 130
Piruitary Adenoma, Recurring, *F. R. Taylor* 73
Thrombosis in Left Side of Cerebellum: Herpes Zoster, *F. R. Taylor* 280

SURGICAL OBSERVATIONS

Abdominal Scars 554
Anemia, Mild Types of 555
Appendicitis in Advanced Pregnancy, The Treatment of Supurative 129
Bladder, Exstrophy of the 326A
Blood Changes in the Leukemias 278
Blood Transfusions 385
Blood Transfusions, Selection of Donors For 76
Cancer, The Curability of 521
Cancer, Radium, X-ray, Cautery and Endotherm in 516
Cancer, Trauma As a Causative Factor in 516
Carcinoma of the Cervix, The Treatment of 129
Cesarean Section 229
Clavicle, Treatment of Fractures of the, With Comminution and Displacement of the Fragments, Making Good Reduction Impossible Without Open Operation 442
Donors For Blood Transfusions, Selection of 76
Exstrophy of the Bladder 326A
Femur, Intertrochanteric Fractures of the 75
Gas Gangrene Following Therapeutic Injections 76
Hand Injuries With Tendon Involvement 15
Hyperthyroidism, Recurrent 442
Intertrochanteric Fractures of the Femur 75
Leukemias, The Blood Changes in the 278
Novocain Block of the Lumbar Sympathetic Ganglia in the Treatment of Thrombophlebitis of the Leg 443
Pneumonia, A Specific Chemical Agent For the Treatment of 76
Prostatectomy, Transurethral 554
Prostatic Conditions, Testosterone Propionate in the Treatment of 326A
Recurrent Hyperthyroidism 442
Scars, Abdominal 554
Specific Chemical Agent For the Treatment of Pneumonia, A 76
Suppurative Appendicitis in Advanced Pregnancy, The Treatment of 129
Testosterone Propionate in the Treatment of Prostatic Conditions 326A
Therapeutic Injections, Gas Gangrene Following 76
Thrombophlebitis of the Leg, Novocain Block of the Lumbar Sympathetic Ganglia in the Treatment of 443
Thyroid Gland Disease, The Diagnosis of Obscure 172
Transfusion, Blood 385
Transfusions, Selection of Donors For Blood 76
Transurethral Prostatectomy 554
Trauma As a Causative Factor in Cancer 516

Davis Hospital Staff

DEPARTMENT EDITORIALS

(Unsigned Department Editorials are by the Editor of the Department; in Departments in which there is more than one Editor, each editorial is signed)

HUMAN BEHAVIOR

Abram's Children 186
Assimilating Philanthropizing 239
Civic Impotence? 443
Diplomacy, Of 327
Freud, Sigmund 498
Good Friday, On 239
Indicated? 21
John Brown, Of, ... 565
Marker, Still 397
Philanthropizing, Assimilating 239
Press and Physic, The 131
Psychiatric Progress 281
Significant 397
Still Marker 397
Texas Squeal, The 77
Trinkle, Elbert Lee 606
Wee Gillis, I Nominate 20

DEPARTMENT EDITOR—*J. K. Hall*

DENTISTRY

Immediate Denture Service 508
Teeth May Be Removed at One Sitting?, How Many 398

DEPARTMENT EDITOR—*J. H. Guion*

UROLOGY

Agranulocytosis Following Administration of Sulfanilamide, *J. A. Alexander* 391
Epididymitis, Treatment of Acute Specific, *P. G. Fox* 80
Gonococcal Infections, Sulfanilamide in, *S. J. Sinkoe* 327
Hematuria—Its Causes and Its Relief, *Aubrey Hawes* 614
Hydronephrotic Kidney, *W. C. Lott* 132
Nitrogenous Retention Caused by Obstruction of a Solitary Kidney, *P. E. Huth* 445
Pyonephrosis, Unilateral Calculous, *John Rhodes* 500
Renal Destruction, Silent, *T. R. Huffines* 238
Stone, Large Ureteral, *N. O. Benson* 558
Sulfanilamide, Agranulocytosis Following Administration of, *J. M. Alexander* 391
Sulfanilamide Therapy in Gonococcal Infections, *S. J. Sinkoe* 327
Unilateral Calculous Pyonephrosis, *John Rhodes* 500
Verumontanitis, *S. H. Justa* 287
Water Balance, Factors Concerned In, *J. H. Dougherty & A. B. Greenwood* 175

DEPARTMENT EDITORS—*H. W. & R. W. McKay*

INTERNAL MEDICINE

Address, Dr. Sleyster's Presidential, *P. H. Ringer* 283
Cardiac Irregularities, The Treatment of, *P. H. Ringer* 25
Directions in Writing and For the Individual Patient, *G. R. Wilkinson* 395
Hypertension, *P. H. Ringer* 82
Jaundice, Painless, *G. R. Wilkinson* 608
Meals Three Times a Day, *G. R. Wilkinson* 451
Preventive Medicine, Limitations in, *P. H. Ringer* 180
Sleyster's Presidential Address, Dr., *P. H. Ringer* 283
Specialist Also a Quack?, Is the, *G. R. Wilkinson* 557
Sulfapyridine in the Treatment of Pneumococcic Infection, *P. H. Ringer* 136

DEPARTMENT EDITORS— *P. H. Ringer (until June); G. R. Wilkinson*

SURGERY

Acute Infection, Newer Methods of Treating Certain Type of Acute 77
Inguinal Hernia, Atrophy of the Testicle Following Repair of, *G. H. Bunch* 608

GYNECOLOGY

Another Sign Post in Gynecology, *G. C. Cooke* 612
Bile Ducts, Operative Injury of the 234
Cancer of the Stomach, A Plea For Surgical Exploration in 390
Colitis, Chronic Ulcerative 28
Disruption of Laparotomy Wounds, The 333
Ductus Arteriosus, Persistent 503

Epigastric Hernia ... 447
Exploration in Stomach Cases ... 390
Donors For Blood Transfusions, The Insane and Feeble-minded as ... 556
Hemorrhage, Control of, by the Gauze Pack, ... 292
Hernia, Epigastric ... 447
Infection, Newer Methods of Treating Certian Types of Acute ... 77
Insane and Feeble-minded as Donors For Blood Transfusions, ... 556
Laparatomy Wounds, Disruption of ... 333
Nerve Injury in Thyroid Operations ... 134
Operative Injury of the Bile Ducts ... 234
Persistent Ductus Arteriosus ... 503
Thyroid Operations, Nerve Injury in ... 134
Trichinosis ... 182
Ulcerative Colitis, Chronic ... 28

DEPARTMENT EDITOR—*G. H. GBunch*

OBSTETRICS

American Congress on Obstetrics and Gynecology, The First, *Ivan Procter* ... 506
Anemias of Pregnancy, The, *Ivan Procter & Kenneth Dickinson* ... 285
Baby?, Who Should Have a, *R. A. White* ... 448
Bladder Post Partum, I. M. Procter ... 613
Breast, Care of the, *Ivan Procter & Kenneth Dickinson* ... 559
Calcium in Prenatal Management, *C. R. Tew* ... 389
Cervix in the Obstetrical Follow-up, The, *Ivan Procter* ... 235
Gum Acacia Solution in Obstetrical Shock, *Ivan Procter* ... 329
History of Previous Pregnancies, *W. Z. Bradford* ... 178
Interruption of Pregnancy, The, *F. B. Carter* ... 133
Obstetrical Follow-up, The Cervix in the, *Ivan Procter* ... 235
Obstetrical Shock, The Use of Gum Acacia Solution in, *Ivan Procter* ... 329
Pregnancy, History of Previous, *W. Z. Bradford* ... 178
Pregnancy, The Anemias of, *Ivan Procter & Kenneth Dickinson* ... 285
Pregnancy, The Interruption of, *F. B. Carter* ... 133
Prenatal Management, The Role of Calcium in, *C. R. Tew* ... 389
Steril.ty, The Problem of, *Ivan Procter & Kenneth Dickinson* ... 24
Third Stage, The, *Ivan Procter* ... 78
Who Should Have a Baby?, *R. A. White* ... 448

DEPARTMENT EDITORS—*H. J. Langston & Ivan Procter*

Myxedema, Overlooked, *G. C. Cooke* ... 447
Observation, On, *G. C. Cooke* ... 388
Sign Post in Gynecology, Another, *G. C. Cooke* ... 508, 563

DEPARTMENT EDITORS—*C. R. Robins & G. C. Cooke*

PEDIATRICS

Aerobacter Cloacae Septicemia ... 502
Asheville Orthopedic Home ... 391
Fever, Acute Rheumatic ... 286
Georgia Pediatric Meeting, The ... 79
Growing Pains ... 237
It Can (And Did) Happen Here ... 28
Man As A Swimmer ... 450
Measles Modification Failure ... 138
Meeting, Academy of Pediatrics ... 611
Memories ... 185
Orthopedic Home, Asheville ... 391
Pains, Growing ... 237
Practice, Notes on ... 330
Rheumatic Fever, Acute ... 286
Septicemia, Aerobacter Cloacae ... 502
Sulfanilamide and Sulfapyridine, Notes on ... 564
Swimmer, Man As a ... 450

DEPARTMENT EDITOR—*G. W. Kutscher, Jr.*

GENERAL PRACTICE

A. M. A., The St.-Louis Meeting of the, *W. M. Johnson* ... 331
Americanism and the Medical Profession, *W. M. Johnson* ... 230
Christian Science, A Close-up View of, *W. M. Johnson* ... 180
Congressman, Write Your, *W. M. Johnson* ... 135
Emerson Opposed Compulsory Health Insurance, Dr. Haven, *W. M. Johnson* ... 81
Farewell, *W. M. Johnson* ... 387
General Practitioner's Job, The, *J. L. Hamner* ... 444

Health Conditions in Washington, *W. M. Johnson* 27
Health Insurance, Dr. Haven Emerson Opposed Compulsory, *W. M. Johnson* 81
Infections, The Family Doctor's Treatment of Urinary-tract, *W. J. Lackey* 501
Influenza, *W. M. Johnson* 27
Medicine in Modern Society (Book Review), *W. M. Johnson* 230
Prenatal Care, *J. L. Hamner* 557
Urinary-tract Infections, The Family Doctor's Treatment of, *W. J. Lackey* 501
Washington, Health Conditions in, *W. M. Johnson* 27
Wounds, Treatment of, *W. J. Lackey* 607
Write Your Congressman, *W. M. Johnson* 135
DEPARTMENT EDITORS—*W. M. Johnson, (until August)*; *J. L. Hamner & W. J. Lackey*

CLINICAL CHEMISTRY AND MICROSCOPY

Clinical Pathological Conference on Pneumococcic Meningitis, *Harold Glascock, Jr., R. P. Morehead, C. C. Carpenter, E. S. King* 30
Mercury Applied to Normal and Abnormal Skin, The Toxicity of, *C. C. Carpenter, Michael Bolus & J. A. Freeman* 336
DEPARTMENT EDITORS—*C. C. Carpenter & R. P. Morehead*

HOSPITALS

Business Manager?, Can Your Hospital Afford a 393
Cooperation Among Hospitals 84
Cooperative Buying For Hospitals 561
Ethics, Hospital 233
Food?, How Is the 336
Graduate Nurse in Private Practice, The 452
Message, Carry Your Own 183
Now Is the Time 504
Nursing Service, The Supply and Demand of 29
Private Practice Nursing 452
Responsibility Lies?, Where does the 610
Time, Now Is the 504
DEPARTMENT EDITOR—*R. B. Davis*

PUBLIC HEALTH

A. M. A., Platform of the, *N. T. Ennett* 613
Amen 32
Health Meeting, Report of 238
Indigent Sick, The 185
Occupations, Tuberculosis by 510
Sanatorium, The Eastern State 292
School Health Program 395
Tuberculosis by Occupations 510
Typhoid Vaccine, Duration of Immunity Conferred by 138
DEPARTMENT EDITOR—*N. T. Ennett*

THERAPEUTICS

Antisyphilitic Drugs and the Wassermann-fast Patient, A Comparative Value of (Abs.), *A. B. Cannon* 396
Arthritis, Observations on the Use of Chaulmoogra Oil in (Abs.), *Camp Stanley* 140
Asthmatic, The Management of (Abs.), *M. B. Cohen* 454
Cervicitis, Osmos For (Abs.), *H. L. Kline* 186
Clinical Diagnosis in General Practice (Abs.), *T. A. Griffith* 509
Diving Injuries, Fatal, (Abs.), *Bul. Metropolitan Life Ins. Co.* 396
Eye Examination, Accuracy in (Abs.), *L. G. Dunlap* 186
Eye, Nose and Throat Diseases, General Practitioner and (Abs.), *L. J. Birsner* 453
Heart Disease, A Rationale For (Abs.), *T. J. Dry* 334
Hypertension, Treatment of (Abs.), *H. Classman* 454
Odds and Ends 563
Osmos For Cervicitis (Abs.), *H. L. Kline* 186
Peptic Ulcer, High-protein Diet in (Abs.), *Chas. Windwer & M. J. Matzner* 141
Wassermann-fast Patient, A Comparative Value of Antisyphilitic Drugs and the Problems of the (Abs.), *A. B. Cannon* 396
DEPARTMENT EDITOR—*J. F. Nash*

TUBERCULOSIS

Asheville Tuberculosis Seminar, The, *P. P. McCain* 289
Bovine Tuberculosis in the United States, The Eradication of, *P. P. McCain* 84
Control of Tuberculosis, The, *P. P. McCain* 23
Federal Aid Requested For Tuberculosis Control, *P. P. McCain* 141

GENERAL

Nalle Clinic Building — 412 North Church Street, Charlotte

THE NALLE CLINIC

Telephone 3-2141 (If no answer, call 3-2621)

General Surgery

BRODIE C. NALLE, M.D.
GYNECOLOGY & OBSTETRICS.

EDWARD R. HIPP, M.D.
TRAUMATIC SURGERY

PRESTON NOWLIN, M.D.
PROCTOLOGY & UROLOGY

Consulting Staff

DOCTORS LAFFERTY & BAXTER
RADIOLOGY

HARVEY P. BARRET, M.D.
PATHOLOGY

General Medicine

LUCIUS G. GAGE, M.D.
DIAGNOSIS

LUTHER W. KELLY, M.D.
CARDIO-RESPIRATORY DISEASES

J. R. ADAMS, M.D.
DISEASES OF INFANTS & CHILDREN

W. B. MAYER, M. D.
DERMATOLOGY & SYPHILOLOGY

WADE CLINIC
Wade Building
Hot Springs National Park, Arkansas

H. KING WADE, M. D.	*Urology*
CHARLES S. MOSS, M.D.	*General Surgery*
J. O. BOYDSTONE, M.D.	*General Medicine*
JACK ELLIS, M.D.	*General Medicine*
FRANK M. ADAMS, M.D	*General Medicine*
N. B. BURCH, M.D.	*Eye, Ear, Nose & Throat*
RAYMOND C. TURK, D.D.S.	*Dental Surgery*
A. W. SCHEER	*X-ray Technician*
ETTA WALE	*Clinical Pathology*
MARY ALICE PHILLIPS	*Clinical Pathology*
MARJORIE WADE	*Bacteriology*

INTERNAL MEDICINE

JAMES M. NORTHINGTON, M.D.
Diagnosis and Treatment
in
INTERNAL MEDICINE
Medical Building — Charlotte

ORTHOPEDICS

ALONZO MYERS, M.D., F.A.C.S.
ORTHOPEDIC SURGERY and FRACTURES
Professional Building — Charlotte

HERBERT F. MUNT, M.D.
FRACTURES
ACCIDENT SURGERY and ORTHOPEDICS
Nissen Building — Winston-Salem, N. C.